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ABSTRACT

This curriculum guide for the Oklahoma Farm Business Management Program contains three instructional units that teach students how to interpret farm records to get optimum use of facilities and maximize profits. Each unit of instruction includes some or all of these components: performance objectives, suggested activities for the instructor, information sheet, transparency masters, handouts, assignment sheets, job sheets, tests, and answers to tests and assignment sheets. The three units cover year-end closing and accuracy check of records, whole farm analysis, and enterprise analysis. (YLB)

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Oklahoma State Department of Vocational and Technical Education
Curriculum and Instructional Materials Center

Analysis of Farm Records

Developed by
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FOREWORD

As farmers and ranchers continue to diversify their operations, recordkeeping grows ever more important. With large amounts of money invested in equipment, livestock, and facilities it is vital that the farmer be able to identify the point of diminishing returns and the point of maximum profit. The Oklahoma Farm Business Management Program fosters the concept of good recordkeeping. This publication, *Analysis of Farm Records*, goes the next step of teaching class members how to interpret these record in order to get optimum use of facilities and maximize profits.

Roy Peters Jr., Director
Oklahoma Department of Vocational and
Technical Education

Edward Smith, State Supervisor
Agriculture Education Division
Oklahoma Department of Vocational and
Technical Education

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Charles Anderson
Oklahoma Department of Agriculture

Mike Grider
Red River AVTS

Jimmy Kinder
Walters, Ok

Charlie Shultz
Great Plains AVTS

Stan Bixler
Northwest AVTS

Roy C. Grider
Perkins, Ok

Ellis Neilson
Nash, Ok

Mitch Zimmerman
High Plains AVTS

Ray Wulf
O.T. Autry AVTS

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CIMC Coordinator

Lynna Ausburn, Ph.D.
Development Coordinator

Brenna Tillman
Publications Supervisor

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O.T. Autry AVTS

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Randy Kirk
Curriculum Specialist
Curriculum and Instructional Materials Center
Oklahoma Department of Vocational
and Technical Education

USE OF THIS PUBLICATION

INSTRUCTIONAL UNITS

Analysis of Farm Records includes three instructional units. A standard format was established in 1970 for development of instructional materials for all Oklahoma vocational teachers. This format includes nine basic components that form a unit of instruction: performance objectives, suggested activities for the instructors, information sheet, transparency masters, handouts, assignment sheets, job sheets, tests, and answers to tests and assignment sheets. Depending on specific objectives, there may or may not be transparency masters, assignment sheets, and job sheets included in each unit of instruction.

All of the unit components "zero in" on measurable and observable learning outcomes. Instructors are encouraged to supplement, personalize, localize, and motivate with these materials in order to develop a complete teaching/learning process.

Units of instruction are designed for use in more than one lesson or class period of instruction. Careful study of each unit of instruction by the instructor will help him or her determine the following

- Amount of material that can be covered in each class period
- Skills that must be demonstrated
    1. Supplies and equipment needed
    2. Amount of practice needed
    3. Amount of class time needed for demonstrations
- Supplementary materials, such as pamphlets and filmstrips, that must be ordered
- Resource people who must be contacted

Performance Objectives (white pages)

Each unit of instruction is based on the performance needed for successful employment in an occupational area. Performance objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction; and specific objectives, stating the performance necessary to reach the unit objective.

Since the objectives of the unit provide direction for the teaching/learning process, it is important that instructors and class members have a common understanding of the intent of the objectives. Following is a list of performance terms, their meanings, and behavioral synonyms that may have been used in this material.

- **Name**—The individual supplies a name for objects, events, or people.
  Behavioral synonyms: Label, list, letter, record, reiterate, repeat, write
- **Identify**—The individual selects a named, described, or pictured object by pointing to it, touching it, picking it up, or selecting it.

Behavioral synonyms: Select, mark, match, choose, judge

- **State a rule**—The individual communicates a relationship or principle that could be used to solve problems or perform a task.
- **Apply a rule**—The individual supplies an answer to a problem by using a stated relationship or principle.

Behavioral synonyms: Solve, calculate

- **Describe**—The individual relates sufficient characteristics or properties of an object or event so that a second individual will be able to state what is being discussed.

Behavioral synonyms: Define, discuss, interpret, recite, tell how, tell what happens when

- **Distinguish**—The individual selects an object or event from two or more that are easily confused.

Behavioral synonyms: Discriminate, differentiate

- **Order**—The individual arranges three or more objects or events in a sequence based on a stated property.

Behavioral synonyms: Arrange, sequence, list in order, classify, divide, isolate, sort

- **Construct**—The individual makes a physical object, a verbal statement, or a drawing.

NOTE: Construct is used when the finished product or result is important.

Behavioral synonyms: Draw, make, build, design, formulate, reproduce, transcribe, convert, put together, compile

- **Demonstrate**—The individual performs several operations necessary to carry out a specified process.

NOTE: Demonstrate is used when it is desirable to watch the student perform a task, one of the highest levels of student performance.

Behavioral synonyms: Show your work, show procedure, perform an experiment, perform the steps, operate, remove, replace, turn off/on, (dis)assemble, (dis)connect

The objectives should be provided for students and stressed throughout the teaching/learning process. This will help answer any questions concerning performance requirements for each instructional unit. The objectives can also help determine teaching strategies and instructional methods. Prepare for each unit by deciding how each objective can best be taught.

The objective sheet may also be used as a quick pretest to determine prior knowledge of class members and to determine whether further study or activities are necessary. Instructors should feel free to modify, delete, or add objectives in order to meet the needs of the class members and community. When changes in objectives are made, the instructor should remember to supply the needed information, assignment and/or job sheets, and criterion test items.

Suggested Activities (pink pages)

This component is included only in instructor material. The suggested activities pages assist the instructor during the preparation stage of the teaching/learning process by providing suggestions for delivery and/or presentation during the instructional process. Read the suggested activities before teaching the units to allow time to obtain supplemental materials, prepare audio-visual materials, and contact outside resources. Duties of the instructor will vary according to the particular unit.

The references that are listed are ones used in the development of each unit. They should be used by the instructor to supplement her or his knowledge of the subject area or to help class members with particular interests or occupational objectives in the area covered.

Information Sheet (green pages)

The information sheet provides "must know" content essential for meeting the cognitive (knowledge level) objectives of the unit. The information is written in a modified outline form and is keyed to the specific objectives.

Instructors will find that the information sheet serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective. The information sheet may also be used for coordinating activities and advisory committees.

Class members should read the information sheet before the information is discussed in class. Space is provided in margins for class members and instructors to add notes that supplement, localize, personalize, or provide motivation for each unit.

Handouts (white pages)

Handouts are additional material that support and go beyond portions of the Information Sheet. Handouts include such activities as games, puzzles, and additional information that may be used to broaden the students understanding of the information.

Transparency Masters (white pages)

Transparency masters provide information in a special way. Transparencies direct the class's attention to the topic of discussion. Transparencies may present new information, or they may reinforce information presented in the information sheet. They are particularly effective when identification is necessary. Make transparencies, and place them in the notebook where they will be immediately available for use.

Assignment Sheets (brown pages)

Assignment sheets give class members a chance at problem solving, self-assessment, and/or practical experience with the information. They assist students in the application of knowledge that is a necessary prerequisite to skill development. These may be given to the student for completion in class or used for homework assignments. Answer sheets are provided when appropriate and can be used by the student and/or instructor for checking student progress.

Written Test (yellow pages)

This component provides criterion-referenced evaluation of every objective listed in the unit of instruction. It is crucial to note that both paper/pencil and performance objectives must be evaluated.

The tests may be written or oral. It is recommended that the tests be divided into shorter tests covering three or four objectives at a time and given soon after those objectives have been covered. A selection of questions from the units covered may be used for final tests at the end of each term if desired. If objectives have been added, deleted, or modified, be sure to make the changes on the test.

The acceptable response on a unit test, 85 percent in most units, may be raised or lowered to fit the topic or class members' ability levels. The percentage applies to the overall score, not to each individual question. The final unit grade should be obtained by using the paper/pencil score along with evaluations of class members' demonstrations of the desired skills.

Answers to Written Test and Assignment Sheets (pink pages)

These components are designed to assist the instructor in evaluation of student performances.

TEACHING METHODS

It is a challenge to keep class members motivated. Supplement the objectives by providing the "why," personal experiences, and current information. Prepare for each unit by deciding how each objective can best be taught. Allow class members to become involved in preparing and planning.

CORRECTIONS AND SUGGESTIONS

The Curriculum and Instructional Materials Center wants to provide vocational instructors and students with materials that are accurate and effective. Although the Center strives to maintain the highest standards of development and production, oversights occasionally do occur. If you find any errors in this or other CIMC publications, or have suggestions for improving their usefulness in vocational programs, please notify the CIMC staff. One easy way of pointing out errors is to make a photocopy of the affected pages and to indicate the correction on the copy. You can then mail the information to the CIMC, where it will be used to correct the publication before the materials are reprinted.

To ensure that the material is updated on a timely basis, it is important that you notify the Center of necessary corrections as soon as possible after discovering the error. Do not assume that someone else will notice the error and inform the CIMC; other users may be making the same assumption. Please send corrections and recommendations for improving this publication to the following address:

Coordinator of Curriculum Development
Curriculum and Instructional Materials Center
Oklahoma Department of Vocational and Technical Education
1500 W. Seventh Avenue
Stillwater, Oklahoma 74074-4364

OBJECTIVE SHEET

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

I

UNIT OBJECTIVE

After completing this unit, the class member should be able to complete checklists for closing a record book and transferring to a new record book. The class member will demonstrate this competency by completing the assignment sheets and written test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the class member should be able to:

1. Match terms associated with year-end closing of records to their correct definitions.
2. State ways of finding and correcting errors in records.
3. Arrange in order steps in year-end closing of records.
4. Select from a list true statements about taking inventory.
5. Describe methods of measuring and recording crop production.
6. Select from a list methods of recording feed consumption.
7. Select from a list the purposes of production records.
8. Arrange in order the steps in transferring to a new record book.
9. Match financial ratios with their formulas.
10. State points to remember when evaluating goals and objectives.
11. Complete a year-end closing of records checklist. (Assignment Sheet 1)
12. Complete and interpret a comparative net worth statement analysis. (Assignment Sheet 2)
13. Complete and interpret a comparative income statement analysis sheet. (Assignment Sheet 3)
14. Evaluate personal performance in attaining farm business and family goals and objectives. (Assignment Sheet 4)
15. Complete an analysis checklist. (Assignment Sheet 5)
16. Complete a net worth statement checklist. (Assignment Sheet 6)

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

PREPARATION

- Order materials to supplement unit.

  NOTE: Order additional forms for *Oklahoma Farm Business Management Record Book* from Oklahoma Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Oklahoma instructors may call 1-800-522-5810 ext. 589. Out-of-state instructors may call 1-800-654-4502.

DELIVERY

- Emphasize the importance of complete and accurate records for income tax management purposes. Review various income tax forms and their due dates.

  NOTE: IRS forms and instructions may change during the course of the year. Always use the latest information available.

- Point out that in units II and III you will discuss the various financial statements and will assist class members in completing whole farm and detailed enterprise analyses of their farm records. Use the comparative analysis for your area of the state to illustrate types of information that can be obtained from the class member's records.

Objective 1

- Point out the importance of defining terms for common understanding.

Objective 2

- Explain that errors will occur, but that they can be found and corrected. You may wish to point out that if a number is transposed (98 is recorded instead of 89) the sum can be divided by nine to discover the error.

Objective 3

- Have class members use Assignment Sheet 1 to record when they have completed each step in the year-end closing of records. Explain that several of the steps will be completed after the end of the accounting year. Have class members turn in the assignment sheet when the checklist is completed.

Objective 4

- Point out the influences that inventories have on net farm income. Show how beginning inventory is considered an expense and ending inventory is an income. Stress the importance of physical inventories.

Objectives 5 through 7

- Emphasize that these records are essential for an adequate enterprise analysis. If this information is incorrect, the enterprise analysis will be incorrect.

Objective 8

- Have class members use Assignment Sheet 1 to record when they have completed each step in transferring records to a new book.
- Remind class members that they must have complete records in their current record book before transferring to a new book. It may take class members a month or two to complete the assignment sheet.
- Have class members review the following purposes of a cash-flow projection:
  - To make possible a budgeted loan.
  - To provide a way for class members to plan financially for combined personal and business expenses.
  - To allow class members to examine how the farm plan will work in the coming year.
  - To provide means to make a sound financial plan at the beginning of year.
  - To allow for timing of purchases and sales for income tax planning.

Objective 9

- Emphasize to class members that financial ratios can yield information on the financial structure of the farm but further analysis is necessary to understand why strength and weaknesses exist.

Objective 10

- Encourage class members to do this on a yearly basis.
- Emphasize the importance of establishing and evaluating goals and objectives. It is the yardstick of this course.

APPLICATION

Objective 11

- Provide some assistance during an on-farm instruction session if necessary.
- NOTE: You may want to review "Cash Flow Management."

- Have class members complete closing of record book and transferring to new record book during scheduled on-farm instruction.

Objective 12

- Encourage class members to develop a cash-flow projection for the coming year for their farming operations.
- Encourage class members who have complete and accurate records to complete a net worth statement.

Objective 13

- Have class members complete the comparitive income statement analysis in order to understand trends in their farm business.

Objective 14

- Point out that class members were encouraged to write their farm business and family goals and objectives during the orientation class.

  NOTE: This assignment sheet is meant to be used as a guide for the class member to determine if any goals or objectives have been achieved. Class members may wish to rewrite or update their goals.

Objective 15

- Encourage students to complete the analysis checklist.

Objective 16

- Encourage students to complete the net worth statement checklist.

EVALUATION

Written Test

- Explain to class members that they will be asked to demonstrate on the written test actions listed in the specific objectives.
- Give written test.

  NOTE: The written test may be given in sections if desired.

- Evaluate class members on assignment sheet activities if not previously done.
- Reteach and retest if necessary.
- Complete appropriate section of competency profile.
- Review individual and group performance in order to evaluate teaching methods. Adjust scope, sequence, or instructional approaches for additional lessons as required.

SUGGESTED RESOURCES

- *Farm Business Records and Financial Statements*, Curriculum and Instructional Materials Center, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, 1989.
- *Oklahoma Farm Business Management Record Book*, Curriculum and Instructional Materials Center, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, 1986.

UNIT REFERENCE

- *Farm Business Management I*, Curriculum and Instructional Materials Center, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, 1984.
- *Farm Business Management II*, Curriculum and Instructional Materials Center, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, 1982.

INFORMATION SHEET	YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS	I

OBJECTIVE 1

Match terms associated with year-end closing of records to their correct definitions.

- **Cash-flow summary** – Written historical record of cash flow showing actual cash income and expenses for a definite period of time, usually one year
- **Comparative net worth statement** – Form used for comparative net worth statement analysis from several years
- **Comparative income statement** – Form used for comparative analysis of income statements from several years
- **Cash-flow projection** – Tool of financial analysis estimating flow of cash through farm business, usually for the period of one year
- **Detailed enterprise analysis** – Management tool used to identify factors affecting profitability and efficiency of various enterprises
- **Goals** – Purposes for farm business and family stated in nonquantifiable terms

  NOTE: Goals are the material and personal aspirations that the class member thinks are most important.
- **Income statement** – Financial statement that lists cash and non-cash receipts and expenses of a farm business during a specified period of time, usually one year
- **Net worth statement** – Financial statement that lists assets and liabilities of a farm business at a particular time, usually at end of accounting year
- **Objectives** – Specific, measurable, realistically attainable, constructive aims that represent an improvement over present level of achievement

  NOTE: Goals are broad, objectives are specific.
- **Ratio** – Relationship in quantity, amount, or size between two or more things
- **Tax management** – Year-round process whereby class members constantly make decisions that can have a large impact on the amount of taxes that will have to be paid at year's end

  NOTE: The objective of income tax management should be to maximize after-tax income.
- **Whole farm analysis** – Management tool used to identify factors affecting profitability and efficiency of farm business

OBJECTIVE 2 **State ways of finding and correcting errors in records.**

- Check all mathematical calculations
- Determine the most likely places for errors to occur

  NOTE: Most errors occur in the feed fed records, although errors can occur in all areas.

- Check to see that transferrals of original figures match those on the actual records
- Correct any inaccuracies or discrepancies found

  NOTE: Beginning and ending inventory must be corrected if found to be inaccurate.

OBJECTIVE 3 **Arrange in order steps in year-end closing of records.**
(Assignment Sheet 1)

1. Complete cash-flow summary (Form 6.2)
2. Complete hired labor records (Form 4.9)
3. Complete summary of family living records (Forms 5.1 and 5.2)
4. Complete depreciation schedule (Forms 3.1, 3.3 and 3.5)
5. Complete ending inventory (Forms 3.1 through 3.9 and 4.1 through 4.5)

   NOTE: Assets and liabilities

6. Complete supplemental records (Forms S-1 through S-10)
7. Complete net worth statement and comparative net worth statement analysis (Forms 6.3 and 6.4)
8. Complete financial ratios (Form 6.5)
9. Complete income statement and comparative income statement analysis sheet (Form 6.6)
10. Complete whole farm business analysis (Form 6.7)
11. Complete measures of performance (Form 6.8)

OBJECTIVE 4 **Select from a list true statements about taking inventory.**

- Inventory is a counting and valuation of all assets and liabilities of the farm business at one moment in time.
- Inventory is taken at the beginning of each accounting period (the end of the previous accounting period). In most farm businesses this is usually once each year.
- Inventory marks the end of the current accounting period and the start of the next accounting period.
- Inventory should be taken at, or as close as possible to, the same time each year.

  NOTE: If inventory is taken on January 5, it would have to be adjusted upward or downward to reflect feed fed, weight, and value of livestock changes between December 31 and January 5, or the normal accounting date.

- Inventory is useful in developing net worth statements, credit acquisition, whole farm and enterprise analysis, and cash-flow projections. The usefulness of inventory records depends upon the accuracy and detail of the inventory.

OBJECTIVE 5 **Describe methods of measuring and recording crop production.**

NOTE: Production per acre may be determined from the Crop Record Form and the Crop Production Summary Form. Although yields are very important, costs must be determined for proper comparison. Higher yields normally would be associated with higher production costs; however, when compared on a per bushel or ton basis, per unit costs are quite frequently lower because of the spreading of fixed costs over increased units of production.

Grains

- Measured at harvest

  NOTE: Adjustments will have to be made if harvest moisture is a problem. This will not usually be a problem in most grains, except corn. Then, merely allow the corn to settle before taking the measurement.

- Measured by volume

Silage production in stacks or piles

- Measured only after the stack has been allowed to settle
- Measured by calculating volume and multiplying by weight per cubic foot

Hay

- Measured at harvest
- Measured by several methods

  NOTE: Since hay is harvested using a variety of methods, quantities are more difficult to measure.

  EXAMPLES: Baled hay is often counted by using the counter on the baler; round baler uses count or weight

- Inflation or deflation of inventories may occur if higher or lower yields are made

  NOTE: This makes farm income erroneously high or low depending on whether the error is made at the beginning or end of the accounting period.

OBJECTIVE 6

Select from a list methods of recording feed consumption.

NOTE: If estimates are high, feed fed is overestimated; this indicates a lower level of feed efficiency in livestock. On the reverse side, low-yield estimates cause estimates of feed available to be underestimated. This would indicate livestock to be more efficient in feed utilization than they actually are. Yield and feed records are independent.

- Convert feed to bushel or weight amounts so amounts reported on inventory are the same as those on feed purchased
- Adjust dry roughage to an air-dry basis
- Adjust silage weights fed to compensate for varying moisture content

  NOTE: Dry matter content of silos will be the same regardless of moisture content and weight of the silage.

- Determine number of pasture days

  NOTE: This will reflect the number of animal days that full roughage feed was obtained from pasture. A rule-of-thumb formula for determining Animal Unit Months (AUMs) is: 30 pasture days = 1 AUM.

  EXAMPLE: If beef cattle were grazing but still being fed one-third ration of dry roughage, class members would record only 20 pasture days for a 30-day period (2/3 x 30).

OBJECTIVE 7

Select from a list the purposes of production records.

- To show relative efficiency of various farm enterprises
- To reflect enterprise efficiency trends over time
- To compare efficiency of enterprises to area farmers
- To help make accurate observations and management decisions

  NOTE: The Livestock Inventory Form is used to record total livestock numbers once a year. The Livestock Production Summary Form is used for individual enterprises to calculate inventories. Acquisitions will equal disappearance in number, and not value, if livestock numbers have been recorded properly.

- To check livestock physical and time data

  NOTE: Calving, farrowing, or lamb drop percentage, which may be derived from this record, can directly affect herd, pen, or flock profitability.

- To obtain useful information from mortality records

  EXAMPLES: If a high mortality figure is obtained for the year in question, this could explain decreased earnings or management, disease, or other production problems indicated by the class member's income statement

OBJECTIVE 8

Arrange in order the steps in transferring to a new record book.

1.	Record beginning inventories	(Forms 3.1 through 3.9 and 4.1 through 4.5)
2.	Record beginning depreciation schedules	(Forms 3.1 through 3.5)
3.	Record beginning cash balance	(Forms 6.1 and 6.3)
4.	Record beginning net worth statement	(Forms 6.3 and 6.4)
5.	Record beginning financial ratios	(Form 6.5)

OBJECTIVE 9 **Match financial ratios with their formulas.**

Certain ratios give valuable information which enable the cooperator to make necessary adjustments. Ratio analysis measures movements and trends in average relationships; they are, at best, indications of position with respect to previous points in time and examine changes within the structure of the farm which have led to changes in net worth. Ratios yield important information about the financial structure of the farm, but do not indicate why strengths or weaknesses exist. Ratios may change over time because of changes in inventory or values of inventory. Values of the discussed ratios in this supplement will vary by size and type of farm.

NOTE: Net worth, while not a ratio, is used in some of the calculations in this objective and is important for the cooperator to know. It is calculated by subtracting total liabilities from total assets. Net worth figures are useful because they indicate to the lenders the risk-bearing capacity of the business. If net worth increases are made up mainly of increases in land values, the economic performance of the business is making little or no contribution to increases in net worth.

Net worth is calculated as:

TOTAL ASSETS - TOTAL LIABILITIES = NET WORTH

- CURRENT RATIO

Current ratio is probably used by more analysts than any other. For agriculture, a ratio of 2:1 is considered a good indicator of the farm's ability to meet short-run obligations. A ratio of 1:1 is marginal; below 1:1 indicates liquidity problems.

Current ratio is calculated as:

$$\frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}} = \text{CURRENT RATIO}$$

NOTE: If a cooperator has a current ratio below 1:1, current liabilities would have to be met out of income generated on the farm or from non-farm sources. Refinancing might be arranged from intermediate and long-term assets.

- WORKING ASSET RATIO

Working asset ratio is the ratio of current plus intermediate assets to current plus intermediate liabilities. It is used to determine farm solvency over an intermediate time span of one to ten years and provides valuable information on loan security and repayability. A good rule of thumb for agriculture is a ratio of 3:1.

Working asset ratio is calculated as:

$$\frac{\text{CURRENT + INTERMEDIATE ASSETS}}{\text{CURRENT + INTERMEDIATE LIABILITIES}} = \text{WORKING ASSET RATIO}$$

NOTE: Lenders who loan money on machinery and equipment would be interested in this ratio. This ratio will vary by the type and size of the farm business.

- NET CAPITAL RATIO

Net capital ratio compares total farm assets to total farm liabilities and is used as an indication of the long-term solvency of the business. It is of interest to lenders because it shows debt load in relation to the total asset value of the farm. A ratio of less than one indicates that a business is insolvent and could not cover all of its debts if forced to liquidate. Lenders generally like to see a ratio of 2:1 which indicates the borrower has substantial risk-bearing ability.

Net capital ratio is calculated as:

$$\frac{\text{TOTAL FARM ASSETS}}{\text{TOTAL FARM LIABILITIES}} = \text{NET CAPITAL RATIO}$$

NOTE: If cooperator has a 2:1 net capital ratio, the value of assets could decline by 50% before becoming insolvent.

- DEBT-TO-EQUITY RATIO

Debt-to-equity ratio measures the farm's total obligations to creditors in relation to the capital provided by the cooperator. Many lending institutions prefer low leverage ratios and interpret most movement in that direction as progress. Higher ratios generate accelerated rates of growth when the rate of return on the investment is greater than the interest rate.

NOTE: This is known as financial leverage.

Debt-to-equity ratio is calculated as:

$$\frac{\text{TOTAL LIABILITIES}}{\text{EQUITY (NET WORTH)}} = \text{DEBT-TO-EQUITY RATIO}$$

Many lenders prefer the borrower to have at least as large of an investment in the farm as the lender. Generally speaking, the maximum ratio should be 1.0:1

NOTE: This is not a maximum for all agriculture business; some cooperators may be able to handle a larger rate of 1.5:1 or 3:1.

- PERCENT EQUITY RATIO

Percent equity ratio is the ratio of net worth to total assets and measures the risk-bearing ability of the farm. Lenders prefer to loan on a percent equity above 50%

Percent equity ratio is calculated as:

$$\frac{\text{NET WORTH}}{\text{TOTAL ASSETS}} \times 100 = \text{PERCENT EQUITY RATIO}$$

EXAMPLE: Net worth is calculated at $200,000; total assets are calculated at $320,000. Percent equity is calculated at 62.5% For every dollar of assets the cooperator has, 62.5 cents is owner equity and 37.5 cents is debt obligation.

OBJECTIVE 10

State points to remember when evaluating goals and objectives. (Assignment Sheet 4)

- Farm business and family goals and objectives should be determined over time
- Planning goals and objectives is not easy
- Not all goals and objectives are related to farm income
- There are no right or wrong goals and objectives
- A systematic approach is helpful
- Revision will be necessary as class members progress through stages of farm cycle

ANALYSIS CHECKLIST

Cash flow

- Crop sales include cash sales and government loans treated as income. No deficiency and diversion is included.
- Government payments include all deficiency and diversion.
- Patronage dividends include cash, stock, and retained earnings.
- Raised non-breeding livestock – contains none purchased for resale.
- Other miscellaneous income is farm related.
- Breeding livestock is for production and not cow/calf for resale.
- Capital asset sales show decrease in inventory and capital asset purchases show increase in inventory.
- All transfers between accounts are removed from totals of receipts and expenses.
- Non-farm includes all royalty payments.
- Interest expense includes only interest payments and not principal. Estimate interest where needed.
- Miscellaneous expenses should not exceed $500. Provide documentation for amounts exceeding $500.
- Taxes does not include income tax.
- Utilities are split into farm and non-farm.
- All livestock purchased for resale, including cow/calf for resale, are shown here and not in Breeding Purchased.
- Machinery and equipment shows purchases and not payments on those items.
- Outflow to loans is only principal paid, no interest.

NET WORTH STATEMENT CHECKLIST

Assets:

- Beginning and ending bank balance corresponds with cash flow.
- Stocks and bonds, non-farm, should not include Co-op or Federal Land Bank stock.
- Non-farm auto not listed with Machinery and Equipment.
- Household items itemized for valuation.
- Recreation itemized.
- Non-farm real estate includes home and like buildings.
- Non-breeding Livestock.
  - Resale livestock valued at purchased price.
  - Raised livestock valued at conservative market price.
- Stored crops.
  - All round bales valued at conservative prices.
- Supplies should not total more than $1,500 under most situations.
- Breeding Livestock – Use conservative market value.
- Machinery and equipment – show management depreciation (straight line).
- Buildings – 15-20 year depreciation (straight line).
- Land values held constant within year.

Liabilities:

- Non-farm charge accounts shown.
- Non-farm autos shown as liabilities in non-farm section.
- Intermediate and long-term remaining is less the current principal payments.
- Intermediate and long-term payments include only principal.

- **Inflow from loans - Outflow to loans = (Ending total farm liabilities - Accrued liabilities, Interest, and Accounts Payable) - (Beginning total farm liabilities - Accrued liabilities, Interest and Accounts Payable)**

or

Inflow from loans minus Outflow to loans equals ending unpaid principal loan balance minus beginning unpaid principal loan balance

Inflow from loans (6.2 line 20) ____________ **(1)**

Outflow to loans (6.2 line 52) −____________ **(2)**

1-2 =____________ **(3)**

Ending principal balance (4.3, 4.4 and 4.5) ____________ **(4)**

Beginning unpaid principal balance (4.3, 4.4 and 4.5) −____________ **(5)**

4-5 =____________ **(6)**

ASSIGNMENT SHEET 1	**YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS**	**I**

OBJECTIVE 11 **Complete a year-end closing of records checklist.**

NAME______________________________SCORE ____

Many errors can be avoided by using a systematic approach for the year-end closing of the record book.

To avoid many year-end closing problems, it is important for the class member to start each year with the correct balances and inventory in the new record book.

Complete year-end closing of your record book by using the following checklist to help you avoid errors. Write the date completed in the "yes" box. Write an "X" in the appropriate "no" box if the item is not completed.

	YES	NO
Complete the year-end totals on cash-flow summary (Form 6.2)		
Complete hired labor records for individual employees (Form 4.7) (**NOTE:** Tax accountant will need hired labor records before January 31 to file FICA withholding taxes and employee W-2 forms.)		
Complete summary of family living records (Forms 5.1 and 5.2)		
Complete ending inventory (Forms 3.1 to 3.9 and 4.1 to 4.5)		
Complete supplemental records (Forms S.1 to S.10)		
Complete ending net worth statement and comparative net worth statement analysis (Forms 6.3 and 6.4)		
Complete financial ratios (Form 6.5)		
Complete income statement and comparative income statement analysis (Form 6.6)		
Complete whole farm business analysis (Form 6.7)		
Complete measures of performance (Form 6.8)		
Date checklist completed _____________, 19______		

ASSIGNMENT SHEET 2

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

I

OBJECTIVE 12

Complete and interpret a comparative net worth statement analysis.

NAME________________________________SCORE ____

INTRODUCTION

Comparing year-to-year growth enables class members to determine what changes, if any, need to be made in the farming operations. One method of accomplishing this is by use of what is commonly called a *comparative analysis*. A comparative analysis allows class members to get all information needed for analysis in a neat, orderly fashion.

PART I

DIRECTIONS

Use the figures given in the comparative analysis on the following pages and calculate the current ratio, working asset ratio, net capital ratio, debt-to-equity ratio, and percent equity. Interpret all ratios calculated. Use the space provided.

Current ratio

1. Year 1– ______________________________
2. Year 2– ______________________________
3. Year 3– ______________________________
4. Year 4– ______________________________
5. Comments: ______________________________

____

Working asset ratio

1. Year 1– ______________________________
2. Year 2– ______________________________
3. Year 3– ______________________________
4. Year 4– ______________________________
5. Comments: ______________________________

____

Net capital ratio

1. Year 1– ______________________
2. Year 2– ______________________
3. Year 3– ______________________
4. Year 4– ______________________
5. Comments: ______________________

____

Debt-to-equity ratio

1. Year 1– ______________________
2. Year 2– ______________________
3. Year 3– ______________________
4. Year 4– ______________________
5. Comments: ______________________

____

Percent equity

1. Year 1– ______________________
2. Year 2– ______________________
3. Year 3– ______________________
4. Year 4– ______________________
5. Comments: ______________________

____

COMPARATIVE NET WORTH STATEMENT ANALYSIS

		YEAR	1-	2-	3-	4-	
N		**CURRENT ASSETS**					
O	1	Family Bank Balance	917	2542	688	466	
N	2	Savings	4236	6669	3922	4224	
	3	Stocks and Bonds	2966	4132	3250	3329	
F	4	Accounts and Notes Receivable	1247	936	625	311	
A	5	Life insurance (cash value)	1874	1900	1950	2060	
R	6	Non-Farm Business Assets	0	0			
M	7	**TOT. NON-FARM CUR. ASSETS**	$ 11240	$ 16179	$ 10435	$ 10390	$
		INTERM. AND LONG TERM ASSETS					
A	8	Auto and other Vehicles	4369	3600	3200	3000	
S	9	Household and Other	8694	9200	9752	10356	
S	10	Other Non-farm Assets	0	0	0	0	
E	11	Non-Farm Real Estate	32294	32294	32294	30000	
T	12	Non-Farm Business Assets	0	0	0	0	
S	13	**TOTAL NON-FARM ASSETS**	$ 56597	$ 61373	$ 55681	$ 53746	$
		CURRENT ASSETS					
	14	Cash in Farm Account	3165	3021	2610	2179	
	15	Farm Accounts Receivable	1477	984	492	0	
	16	Beef Non-Breeding	31682	35334	47379	40644	
	17	Other Non-Breeding	1777	2124	1800	1500	
	18	Other Non-Breeding	0	0	0	0	
	19		0	0	0	0	
	20	Feed and Seed on hand	1054	1002	1167	1036	
	21	Stored Crops	13352	10552	11059	11847	
	22	Growing Crops	16715	14418	14990	15055	
F	23	Supplies	1590	1140	1004	1084	
A	24	Other Current Assets					
R	25	**TOTAL FARM CURRENT ASSETS**	$ 70812	$ 68575	$ 82501	$ 73345	$
M		**INTERMEDIATE ASSETS**					
	26	Beef, Breeding	20801	21903	22564	22143	
A	27	Other Breeding	522	368	769	397	
S	28	Other Breeding					
S	29						
E	30	Farm Accounts Receivable	3250	2438	1626	4000	
T	31	Machinery & Equipment	71573	70104	69325	75014	
S	32	**TOTAL FARM INTERM. ASSETS**	$ 96146	$ 94813	$ 94284	$ 101554	$
		LONG TERM ASSETS					
	33	Buildings	30600	29500	28400	27300	
	34	Land	206855	206855	206855	195413	
	35	**TOTAL FARM LONG TERM ASSETS**	$ 237455	$ 236355	235255	$ 222713	$
	36	**TOTAL FARM ASSETS**	$ 404413	$ 399743	412040	$ 397612	$
	37	**TOTAL ASSETS**	$ 461010	$ 461116	467721	$ 451358	$

COMPARATIVE NET WORTH STATEMENT ANALYSIS (continued)

		YEAR	1-	2-	3-	4-	
N		**CURRENT LIABILITIES**					
O	38	Charge Accounts	307	207	283	219	
N	39	Notes, Portion due <12 Mo.	392	392	392	0	
	40	Mortgages, due < 12 Mo.	961	961	961	961	
F	41	Accrued Interest on Non-Farm Liab.	60	85	112	215	
A	42	Non-Farm Business Liab. due < 12 Mo.	0	0	0	0	
R	43	**TOTAL NON-FARM CURRENT LIAB.**	$ 1720	$ 1645	$ 1748	$ 1395	$
M		**INTERM. AND LONG TERM LIAB.**					
	44	Notes, portion due > 12 Mo.	3500	3108	1500	0	
L	45						
I	46	Mortgages, portion due > 12 Mo.	14143	13182	12221	12221	
A	47	Non-Farm Business Liab. due > 12 Mo.	0	0	0	0	
B.	48	**TOTAL NON-FARM LIABILITIES**	$ 19363	$ 17935	$ 15469	$ 13616	$
	49	**NON-FARM NET WORTH**	$ 37234	$ 43438	$ 40212	$ 40130	$
		CURRENT LIABILITIES					
	50	Short Term Farm Notes Payable	14654	20840	28449	18956	
	51						
	52						
	53	Accounts Payable	2592	1612	1841	2124	
	54						
F	55						
A	56	Credit Lines & Short Term Notes					
R	57	Inter. Term Debt due < 12 Mo.	6500	6500	6500	6500	
M	58	Long Term Debt due < 12 Mo.	2735	2735	2735	2735	
	59	Accrued Liabilities(taxes, etc.)	250	275	250	263	
L	60	Accrued Interest	1500	1235	1464	1346	
I	61	**TOTAL FARM CURRENT LIABILITIES**	$ 28231	$ 33197	$ 41239	$ 31922	$
A		**INTERMEDIATE LIABILITIES**					
B	62	Interm. Term Debt due > 12 Mo.	26753	20253	13753	7523	
I	63					4000	
L	64						
I	65						
T		**TOTAL FARM INTERM. LIABILITIES**	$ 26753	$ 20253	$ 13753	$ 11523	$
I		**LONG TERM LIABILITIES**					
E	66	Long Term Debt due > 12 Mo.	109400	106665	103930	101195	
S	67						
	68						
	69	**TOTAL FARM LONG TERM LIAB.**	$ 109400	$ 106665	$ 103930	$ 101195	$
	70	**TOTAL FARM LIABILITIES**	$ 164384	$ 160115	$ 158922	$ 144640	$
	71	**TOTAL FARM NET WORTH**	$ 240029	$ 239628	$ 253118	$ 252972	$
	72	**TOTAL LIABILITIES**	$ 183747	$ 178050	$ 174391	$ 158256	$
	73	**TOTAL NET WORTH**	$ 277263	$ 283066	$ 293330	$ 293102	$

PART II

DIRECTIONS

Using net worth statements from previous years, complete a comparative net worth statement analysis for your farm business.

COMPARATIVE NET WORTH STATEMENT ANALYSIS

		YEAR					
N		**CURRENT ASSETS**					
O	1	Family Bank Balance					
N	2	Savings					
	3	Stocks and Bonds					
F	4	Accounts and Notes Receivable					
A	5	Life Insurance (cash value)					
R	6	Non–Farm Business Assets					
M	7	**TOT. NON–FARM CUR. ASSETS**	$	$	$	$	$
		INTERM. AND LONG TERM ASSETS					
A	8	Auto and other Vehicles					
S	9	Household and Other					
S	10	Other Non–farm Assets					
E	11	Non–Farm Real Estate					
T	12	Non–Farm Business Assets					
S	13	**TOTAL NON–FARM ASSETS**	$	$	$	$	$
		CURRENT ASSETS					
	14	Cash in Farm Account					
	15	Farm Accounts Receivable					
	16	Beef Non–Breeding					
	17	Other Non–Breeding					
	18	Other Non–Breeding					
	19						
	20	Feed and Seed on hand					
	21	Stored Crops					
	22	Growing Crops					
F	23	Supplies					
A	24	Other Current Assets					
R	25	**TOTAL FARM CURRENT ASSETS**	$	$	$	$	$
M		**INTERMEDIATE ASSETS**					
	26	Beef, Breeding					
A	27	Other Breeding					
S	28	Other Breeding					
S	29						
E	30	Farm Accounts Receivable					
T	31	Machinery & Equipment					
S	32	**TOTAL FARM INTERM. ASSETS**	$	$	$	$	$
		LONG TERM ASSETS					
	33	Buildings					
	34	Land					
	35	**TOTAL FARM LONG TERM ASSETS**	$	$		$	$
	36	**TOTAL FARM ASSETS**	$	$		$	$
	37	**TOTAL ASSETS**	$	$		$	$

COMPARATIVE NET WORTH STATEMENT ANALYSIS (continued)

		YEAR					
N		**CURRENT LIABILITIES**					
O	38	Charge Accounts					
N	39	Notes, Portion due <12 Mo.					
	40	Mortgages, due < 12 Mo.					
F	41	Accrued Interest on Non-Farm Liab.					
A	42	Non-Farm Business Liab. due < 12 Mo.					
R	43	**TOTAL NON-FARM CURRENT LIAB.**	$	$	$	$	$
M		**INTERM. AND LONG TERM LIAB.**					
	44	Notes, portion due > 12 Mo.					
L	45						
I	46	Mortgages, portion due > 12 Mo.					
A	47	Non-Farm Business Liab. due > 12 Mo.					
B.	48	**TOTAL NON-FARM LIABILITIES**	$	$	$	$	$
	49	**NON-FARM NET WORTH**	$	$	$	$	$
		CURRENT LIABILITIES					
	50	Short Term Farm Notes Payable					
	51						
	52						
	53	Accounts Payable					
	54						
F	55						
A	56	Credit Lines & Short Term Notes					
R	57	Inter. Term Debt due < 12 Mo.					
M	58	Long Term Debt due < 12 Mo.					
	59	Accrued Liabilities(taxes, etc.)					
L	60	Accrued Interest					
I	61	**TOTAL FARM CURRENT LIABILITIES**	$	$	$	$	$
A		**INTERMEDIATE LIABILITIES**					
B	62	Interm. Term Debt due > 12 Mo.					
I	63						
L	64						
I	65						
T		**TOTAL FARM INTERM. LIABILITIES**	$	$	$	$	$
I		**LONG TERM LIABILITIES**					
E	66	Long Term Debt due > 12 Mo.					
S	67						
	68						
	69	**TOTAL FARM LONG TERM LIAB.**	$	$	$	$	$
	70	**TOTAL FARM LIABILITIES**	$	$	$	$	$
	71	**TOTAL FARM NET WORTH**	$	$	$	$	$
	72	**TOTAL LIABILITIES**	$	$	$	$	$
	73	**TOTAL NET WORTH**	$	$	$	$	$

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

OBJECTIVE 13

Complete and interpret a comparative income statement analysis sheet.

NAME______________________________SCORE ____

INTRODUCTION

Net farm income measures profitability of a farm business during an accounting period. Comparing net farm income over time indicates the growth or decline in business profitability.

PART I

DIRECTIONS

Analyze the following comparative income statement analysis sheet and complete the sentences about trends you found in the farm business. Write an "X" in the blank before the best description of that trend; then in the space provided, comment on that trend.

PART II

Using income statements from previous years, complete and interpret a comparative income statement analysis for your farm business.

COMPARATIVE INCOME STATEMENT ANALYSIS SHEET

Line from Income Statement	19____	19____	19____	19____	19____
TOTAL FARM RECEIPTS (Line 1)	124,916	142,086	176,261	171,826	164,421
TOTAL FARM EXPENSES (Line 2)	118,487	140,070	176,286	163,610	163,875
NET CASH INCOME (Line 3)	6,429	2,016	(25)	8,216	546
TOTAL ADJUSTMENTS FOR ACCOUNTS RECEIVABLE AND PAYABLE (Line 6)	704	(597)	(669)	517	721
NET FARM EARNINGS (Line 7)	7,133	1,419	(694)	8,733	1,267
TOTAL INVENTORY ADJUSTMENTS (Line 12)	(13,680)	20,073	24,027	18,124	26,720
VALUE OF PRODUCTS USED IN THE HOME (Line 13)	502	325	303	316	283
NET FARM INCOME: RETURN TO UNPAID LABOR, NET WORTH, AND MANAGEMENT (Line 14)	(6,045)	21,817	23,636	27,173	28,270

PART I

A. Total farm receipts

1. The long-range trend is ________ increasing

   ________ decreasing

2. Comments: ____

   ____

   ____

   ____

B. Total farm expenditures

1. The long-range trend is ________ increasing

   ________ decreasing

2. Comments: ____

   ____

   ____

   ____

C. Net cash income

1. The long-range trend is ________ increasing

   ________ decreasing

2. Comments: ____

   ____

   ____

   ____

Adjustments for Accounts Receivable and Payable

D. Total accrued receipt and expense items

1. The long-range trend is ________ increasing

________ decreasing

2. Comments: ____

____

____

____

E. Net farm earnings

1. The long-range trend is ________ increasing

________ decreasing

2. Comments: ____

____

____

____

F. Total inventory adjustment

1. The long-range trend is ________ increasing

________ decreasing

2. Comments: ____

____

____

____

G. **Net farm income**

1. **The long-range trend is _________ increasing**

   _________ decreasing

2. **Comments:____**

   ____

   ____

   ____

COMPARATIVE INCOME STATEMENT ANALYSIS SHEET

Line from Income Statement	19____	19____	19____	19____	19____
TOTAL FARM RECEIPTS (Line 1)					
TOTAL FARM EXPENSES (Line 2)					
NET CASH INCOME (Line 3)					
TOTAL ADJUSTMENTS FOR ACCOUNTS RECEIVABLE AND PAYABLE (Line 6)					
NET FARM EARNINGS (Line 7)					
TOTAL INVENTORY ADJUSTMENTS (Line 12)					
VALUE OF PRODUCTS USED IN THE HOME (Line 13)					
NET FARM INCOME: RETURN TO UNPAID LABOR, NET WORTH, AND MANAGEMENT (Line 14)					

PART II

A. Total farm receipts

1. The long-range trend is ________ increasing
   ________ decreasing
2. Comments: ____
   ____
   ____
   ____

B. Total farm expenditures

1. The long-range trend is ________ increasing
   ________ decreasing
2. Comments: ____
   ____
   ____
   ____

C. Net cash income

1. The long-range trend is ________ increasing
   ________ decreasing
2. Comments: ____
   ____
   ____
   ____

Adjustments for Accounts Receivable and Payable

D. Total accrued receipt and expense items

1. The long-range trend is ________ increasing

   ________ decreasing

2. Comments: ____

   ____

   ____

   ____

E. Net farm earnings

1. The long-range trend is ________ increasing

   ________ decreasing

2. Comments: ____

   ____

   ____

   ____

F. Total inventory adjustment

1. The long-range trend is ________ increasing

   ________ decreasing

2. Comments: ____

   ____

   ____

   ____

G. Net farm income

1. The long-range trend is ________ increasing

________ decreasing

2. Comments: ____

____

____

____

ASSIGNMENT SHEET 4

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

OBJECTIVE 14

Evaluate personal performance in attaining farm business and family goals and objectives.

NAME______________________________SCORE ____

INTRODUCTION

This assignment sheet is the yardstick for the entire program. Clear goals and well-defined objectives provide an outline for guiding the use of available resources, setting priorities, and measuring success. It is essential that adequate time and consideration be given to completing this assignment sheet.

Writing goals constitutes a two-step process. First, goals must be clarified. These are the materials and personal aspirations the class member thinks are most important. Goals describe purposes for the farm business and family in nonquantifiable terms. Next, objectives are established to assist the class member in attaining the goals. These must be specific, measurable, realistically attainable, constructive, and represent an improvement over the present level of achievement. Simply stated, goals are broad and objectives are specific.

Goals and objectives may be family or farm business orientated. They might also apply to different time periods: *short term* is less than one year, *intermediate term* is one to seven years, and *long-term* is over seven years.

DIRECTIONS

Consider the following points in clarifying the class member's goals and establishing objectives:

- All family members should participate
- Recognize individual and family differences
- Recognize farm and family characteristics

  EXAMPLES: Size of family; stage in family life cycle; size and type of farm business; social, cultural, and religious values; financial structure of farm business

- Recognize time periods
- Select goals in terms of available resources
- Competition between goals in normal

- Goals and objectives must be modified as resources and ideals change

FAMILY AND FARM BUSINESS GOALS

What do you as a family consider most important for your future welfare, happiness, and security? One of the steps for improving the farm business is to clarify what is wanted. Is it community involvement, a retirement plan, college education for the children, a comfortable home, or a partnership farming operation? You may know of things you have wanted as a family, but it takes considerable thought and discussion among family members to agree upon what is most important and which things come first.

DIRECTIONS

Using the farm business and family goals and objectives developed and reviewed previously, and the forms on the following pages, evaluate your performance in achieving your objectives. Write an "X" in the appropriate boxes. Make additional comments if necessary.

FARM BUSINESS

GOALS	OBJECTIVES	Evaluation										COMMENTS
		Difficulty of the Objective					Achievement of the Objective					
		Extremely Difficult	Difficult	Some Difficulty	Easy	Extremely Easy	Exceeded	Achieved	Partially Met	Little Done	No Activity	

FARM BUSINESS

GOALS	OBJECTIVES	Evaluation										COMMENTS
		Difficulty of the Objective					Achievement of the Objective					
		Extremely Difficult	Difficult	Some Difficulty	Easy	Extremely Easy	Exceeded	Achieved	Partially Met	Little Done	No Activity	

FAMILY

GOALS	OBJECTIVES	Evaluation										COMMENTS
		Difficulty of the Objective					Achievement of the Objective					
		Extremely Difficult	Difficult	Some Difficulty	Easy	Extremely Easy	Exceeded	Achieved	Partially Met	Little Done	No Activity	

FAMILY

GOALS	OBJECTIVES	Evaluation										COMMENTS
		Difficulty of the Objective					Achievement of the Objective					
		Extremely Difficult	Difficult	Some Difficulty	Easy	Extremely Easy	Exceeded	Achieved	Partially Met	Little Done	No Activity	

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

OBJECTIVE 15

Complete an analysis checklist.

NAME______________________________SCORE ____

CASH FLOW

____ Crop sales include cash sales and government loans treated as income. No deficiency and diversion is included.

____ Government payments include all deficiency and diversion.

____ Patronage dividends include cash, stock, and retained earnings.

____ Raised non-breeding livestock – contains none purchased for resale.

____ Other miscellaneous income is farm related.

____ Breeding livestock is for production and not cow/calf for resale.

____ Capital asset sales show decrease in inventory and capital asset purchases show increase in inventory.

____ All transfers between accounts are removed from totals of receipts and expenses.

____ Non-farm includes all royalty payments.

____ Interest expense includes only interest payments and not principal. Estimate interest where needed.

____ Miscellaneous expense should not exceed $500. Provide documentation for amounts exceeding $500.

____ Taxes does not include income tax.

____ Utilities are split into: farm and non-farm.

____ All livestock purchased for resale, including cow/calf for resale, are shown here and not in Breeding Purchased.

____ Machinery and equipment shows purchases and not payments on those items.

____ Outflow to loans is only principal paid, no interest.

ASSIGNMENT SHEET 6

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

OBJECTIVE 16

Complete a net worth statement checklist.

NAME____________________________SCORE ____

ASSETS

_____ Beginning and ending bank balance corresponds with cash flow.

_____ Stocks and bonds, non-farm, should not include Co-op or Federal Land Bank stock.

_____ Non-farm auto not listed with Machinery and Equipment.

_____ Household items itemized for valuation.

_____ Recreation itemized.

_____ Non-farm real estate includes home and like buildings.

_____ Non-breeding livestock.

- Resale livestock valued at purchased price.
- Raised livestock valued at conservative market price.

_____ Stored crops.

- All round bales valued at conservative prices.

_____ Supplies should not total more than $1,500 under most situations.

_____ Breeding Livestock – Use conservative market value.

_____ Machinery and equipment – show management depreciation (straight line).

_____ Buildings – 15-20 year depreciation (straight line).

_____ Land values held constant within year.

Liabilities

_____ Non-farm charge accounts shown.

_____ Non-farm autos shown as liabilities in non-farm section.

_____ Intermediate and long-term remaining is less the current principal payments.

_____ Intermediate and long-term payments include only principal.

_____ Inflow from loans.

Inflow from loans - Outflow to loans = (Ending total farm liabilities - Accrued liabilities, Interest, and Accounts Payable) - (Beginning total farm liabilities - Accrued liabilities, Interest and Accounts Payable)

or

Inflow from loans minus Outflow to loans equals ending unpaid principal loan balance minus beginning unpaid principal loan balance

Inflow from loans (6.2 line 20)	____________(1)
Outflow to loans (6.2 line 52)	-____________(2)
1-2	=____________(3)
Ending principal balance (4.3, 4.4 and 4.5)	____________(4)
Beginning unpaid principal balance (4.3, 4.4 and 4.5)	-____________(5)
4-5	=____________(6)

OBJECTIVE 11

Ensure that form is filled out completely

OBJECTIVE 12

PART I

Current ratio (farm)

1. $\frac{70{,}812}{28{,}231} = 2.50:1$
2. $\frac{68{,}575}{33{,}197} = 2.07:1$
3. $\frac{82{,}501}{41{,}239} = 2.00:1$
4. $\frac{73{,}345}{31{,}922} = 2.29:1$
5. Ratio is above 2:1 which demonstrates ability to repay current outstanding debt.

Working asset ratio

1. $\frac{70{,}812 + 96{,}146}{28{,}231 + 26{,}753} = \frac{166{,}958}{54{,}984} = 3.03:1$
2. $\frac{68{,}575 + 94{,}813}{33{,}197 + 20{,}253} = \frac{163{,}388}{53{,}450} = 3.07:1$
3. $\frac{82{,}501 + 94{,}284}{41{,}239 + 13{,}753} = \frac{176{,}785}{54{,}992} = 3.21:1$
4. $\frac{73{,}345 + 101{,}554}{31{,}922 + 11{,}523} = \frac{174{,}899}{43{,}445} = 4.02:1$
5. Ratio is above 3:1 which demonstrates loan repayability. This can be used to determine solvency over a span of one to ten years.

Net capital ratio (farm)

1. $\frac{404,413}{164,384}$ = 2.46:1

2. $\frac{399,743}{160,115}$ = 2.50:1

3. $\frac{412,040}{158,922}$ = 2.59:1

4. $\frac{397,612}{144,640}$ = 2.75:1

5. Since lenders prefer a ratio of 2:1 or greater, this is a solid increasing trend.

Debt-to-equity ratio (total)

1. $\frac{183,747}{277,263}$ = .66:1

2. $\frac{178,050}{283,066}$ = .63:1

3. $\frac{174,391}{293,330}$ = .59:1

4. $\frac{158,256}{293,102}$ = .54:1

5. This financial leverage ratio should not reach 1:1. This ratio has been moving in a favorable direction.

Percent equity (total)

1. $\frac{277,263}{461,010}$ = .601 x 100 = 60.1%

2. $\frac{283,066}{461,116}$ = .614 x 100 = 61.4%

3. $\frac{293,330}{467,721}$ = .627 x 100 = 62.7%

4. $\frac{293,102}{451,358}$ = .649 x 100 = 64.9%

5. Lenders prefer a number of 50% or greater. The measure of risk-bearing ability of this operation is good.

PART II--Ensure that form is filled out completely.

OBJECTIVE 13

PART I

Total farm receipts

1. Increasing and Decreasing
2. Comments should include the following:

   Farm receipts increased two years and have started to decline for two years. Investigate enterprises and prices to find cause.

Total farm expenditures

1. Increasing
2. Comments should include the following:

   Overall trend is increasing with the third year being unusually high.

Net cash income

1. No trend determined
2. Comments should include the following:

   Variation makes planning difficult

Total adjustments for accounts receivable and payable

1. Straight line trend
2. Comments should include the following:

   These amounts are not large enough to adversely affect operation.

Net farm earnings

1. No trend determined
2. Comments should include the following:

   This situation reflects the high expenditures stressing the receipts

Total inventory adjustment

1. Increasing
2. Comments should include the following:

   Be sure these are not paper profits. This trend indicates rebuilding of herds or storage of crops or equity being turned back into the business.

Net farm income

1. Increasing
2. Comments should include the following:

   Solid increases. There have been improvement made.

PART II – Ensure that form is filled out completely.

OBJECTIVE 14 Ensure that form is filled out completely.

OBJECTIVE 15 Ensure that form is filled out completely.

OBJECTIVE 16 Ensure that form is filled out completely.

WRITTEN TEST

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

I

NAME______________________________ SCORE _____

OBJECTIVE 1

Match terms associated with year-end closing of records to their correct definitions. Write the correct letters in the blanks. (Questions continued on the following page.)

_____ 1. Financial statement that lists assets and liabilities of a farm business at a particular time, usually at end of accounting year

_____ 2. Financial statement that lists cash and non-cash receipts and expenses of a farm business during a specified period of time, usually one year

_____ 3. Written historical record of cash flow showing actual cash income and expenses for a definite period of time, usually one year

_____ 4. Form used for comparative net worth statement analysis for several years

_____ 5. Form used for comparative analysis of income statements for several years

_____ 6. Tool of financial analysis estimating flow of cash through farm business, usually for the period of one year

_____ 7. Management tool used to identify factors affecting profitability and efficiency of farm business

_____ 8. Management tool used to identify factors affecting profitability and efficiency of various enterprises

_____ 9. Purposes for farm business and family stated in nonquantifiable terms

____ 10. Specific, measurable, realistically attainable, constructive aims that represent an improvement over present level of achievement

a. Ratio

b. Comparative net worth statement

c. Objectives

d. Net worth statement

e. Comparative income statement

f. Cash-flow summary

g. Detailed enterprise analysis

h. Tax management

i. Income statement

j. Cash-flow projection

k. Whole farm analysis

l. Goals

___ 11. Year-round process whereby class members constantly make decisions that can have a large impact on the amount of taxes that will have to be paid at year's end

___ 12. Relationship in quantity, amount, or size between two or more things

OBJECTIVE 2

State ways of finding and correcting errors in records. Write three ways in the space provided.

____

____

____

____

____

____

OBJECTIVE 3

Arrange in order steps in year-end closing of records. Write a "1" before the first step, a "2" before the second step, and so on.

_____ Complete net worth statement and comparative net worth statement analysis

_____ Complete summary of family living records

_____ Complete cash-flow summary

_____ Complete income statement and comparative income statement analysis sheet

_____ Complete hired labor records

_____ Complete depreciation schedules

_____ Complete ending inventories

_____ Complete whole farm business analysis

_____ Complete financial ratios

_____ Complete supplemental records

_____ Complete measures of performance

OBJECTIVE 4

Select from a list true statements about taking inventory. Write an "X" in the blank before each correct answer.

_____ 1. Inventory is a counting and valuation of all assets and liabilities of the farm at one moment in time.

_____ 2. Inventory should be taken at, or as close as possible to, the same time each year.

_____ 3. Only assets of the farm business should be counted in an inventory.

OBJECTIVE 5

Describe methods of measuring and recording crop production. Write your answer in the space provided.

Grains – ____

____

____

____

Silage production in stacks or piles – ______________________

____

____

____

____

Hay – ______________________________

____

____

____

____

____

OBJECTIVE 6

Select from a list methods of recording feed consumption. Write an "X" in the blank before each correct answer.

_____ 1. Write it on the barn wall; this is better than nothing

_____ 2. Convert feed to bushel or weight amounts so amounts reported on inventory are the same as those on feed purchased

_____ 3. Determine number of pasture days

_____ 4. Adjust dry roughage to an air-dry basis

_____ 5. Estimate weights

_____ 6. Adjust silage weights fed to compensate for varying moisture content

OBJECTIVE 7

Select from a list the purposes of production records. Write an "X" in the blank before each correct answer.

_____ 1. To show relative efficiency of various farm enterprises

_____ 2. To allow correction of inaccuracies

_____ 3. To reflect enterprise efficiency trends over time

_____ 4. To give you something to look over during the winter

_____ 5. To be used with net worth analysis

_____ 6. To compare efficiency of enterprises to area farmers

_____ 7. To help make accurate observations and management decisions

_____ 8. To check livestock physical and time data

_____ 9. To obtain useful information from mortality records

OBJECTIVE 8

Arrange in order the steps in transferring to a new record book. Write a "1" before the first step, a "2" before the second step, and so on.

_____ Record beginning cash balance

_____ Record beginning inventories

_____ Record beginning financial ratios

_____ Record beginning net worth statement

_____ Record beginning depreciation schedules

OBJECTIVE 9

Match financial ratios with their formulas. Write the correct letters in the blanks.

____ 1. Current Ratio

____ 2. Working Asset Ratio

____ 3. Net Capital Ratio

____ 4. Debt-to-Equity Ratio

____ 5. Percent Equity Ratio

a. $\frac{\text{Total Liabilities}}{\text{Equity (Net Worth)}}$

b. $\frac{\text{Current + Intermediate Assets}}{\text{Current + Intermediate Liabilities}}$

c. $\frac{\text{Net Worth}}{\text{Total Assets}} \times 100$

d. $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

e. $\frac{\text{Total Farm Assets}}{\text{Total Farm Liabilities}}$

OBJECTIVE 10

State points to remember when evaluating goals and objectives. Write four points.

____

____

____

____

____

____

____

____

NOTICE:	The following assignment sheets are not part of the written test. If these activities have not been completed, check with your instructor.	
OBJECTIVE 11	**Complete a year-end closing of records checklist.**	SCORE ________
OBJECTIVE 12	**Complete and interpret a comparative net worth statement analysis.**	SCORE ________
OBJECTIVE 13	**Complete and interpret a comparative income statement analysis sheet.**	SCORE ________
OBJECTIVE 14	**Evaluate personal performance in attaining farm business and family goals and objectives.**	SCORE ________
OBJECTIVE 15	**Complete an analysis checklist.**	SCORE ________
OBJECTIVE 16	**Complete a net worth statement checklist.**	SCORE ________

WRITTEN TEST ANSWERS

YEAR-END CLOSING AND ACCURACY CHECK OF RECORDS

I

OBJECTIVE 1

1. d
2. i
3. f
4. b
5. e
6. j
7. k
8. g
9. l
10. c
11. h
12. a

OBJECTIVE 2

Answer should include any three of the following:

- Check all mathematical calculations
- Determine the most likely places for errors to occur
- Check to see that transferrals of original figures match those on the actual records
- Correct any inaccuracies or discrepancies found

OBJECTIVE 3

7, 3, 1, 9, 2, 4, 5, 10, 8, 6, 11

OBJECTIVE 4

1, 2

OBJECTIVE 5

Answer should include:

Grains

- Measured at harvest
- Measured by volume

Silage production in stacks or piles

- Measured only after the stack has been allowed to settle
- Measured by calculating volume and multiplying by weight per cubic foot

Hay

- Measured at harvest
- Measured by several methods
- Inflation or deflation of inventories may occur if higher or lower yields are made

OBJECTIVE 6 2, 3, 4, 6

OBJECTIVE 7 1, 3, 6, 7, 8, 9

OBJECTIVE 8 3, 1, 5, 4, 2

OBJECTIVE 9

1. d
2. b
3. e
4. a
5. c

OBJECTIVE 10 Answer should include any four of the following:

- Farm business and family goals and objectives should be determined over time
- Planning goals and objectives is not easy
- Not all goals and objectives are related to farm income
- There are no right or wrong goals and objectives
- A systematic approach is helpful
- Revision will be necessary as class members progress through stages of farm cycle

OBJECTIVES 11-16 Refer to answers to Assignment Sheets 1 through 6.

OBJECTIVE SHEET

WHOLE FARM ANALYSIS

II

UNIT OBJECTIVE

After completing this unit, the class member should be able to analyze and interpret the performance of the farm business for the preceding year. The class member will demonstrate these competencies by completing the assignment sheets and written test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the class member should be able to:

1. Match terms associated with whole farm and detailed enterprise analysis to their correct definitions.
2. State purposes of whole farm analysis.
3. List resource information needed to complete a whole farm analysis.
4. List advantages and disadvantages of a computerized whole farm analysis.
5. Match types of comparison standards from different information sources to their correct descriptions.
6. Arrange in order steps in outlining a whole farm analysis.
7. State purposes of a net worth statement.
8. Match financial ratios found on net worth statements to their correct descriptions.
9. State purposes of the income statement.
10. State ways in which a comparative income statement analysis may be used for analytical and comparative purposes.
11. Match the returns to resources to their correct descriptions.
12. Select from a list measures of performance useful in interpreting whole farm analysis.
13. Match common ways to measure farm business size to their correct descriptions.
14. Discuss ratio of capital investment per man-year.
15. Match measures of income performance to their correct descriptions.
16. Match efficiency ratios for the farm to their correct descriptions.

17. Select from a list measures of performance between investment and income.

18. Complete an *Oklahoma Farm Business Management Record Book* – Whole Farm Business Form 6.7. (Assignment Sheet 1)

19. Complete an *Oklahoma Farm Business Management Record Book* – Measures of Performance Form 6.8. (Assignment Sheet 2)

20. Complete a step-by-step outline of your whole farm analysis. (Assignment Sheet 3)

SUGGESTED ACTIVITIES

WHOLE FARM ANALYSIS

II

PREPARATION

- Order materials to supplement unit.
- Be sure that all class members have a copy of the *Oklahoma Farm Business Management Record Book*.

DELIVERY

Introduction

- Point out that an income tax return is not a good measure of profitability as it does not show non-cash items that must be adjusted for, and income tax depreciation may be excessive when analyzing the form for management purposes.
- Accurate records are essential to perform an adequate whole-farm analysis.
- Whole-farm analysis can provide early warning signs that can help avoid problems in later years.

Objective 1

- Point out the importance of defining terms for common understanding.

Objective 2

- Emphasize the usefulness of whole-farm analysis in providing basic information necessary in the management decision-making process.

Objective 3

- Relate that all information, other than physical production and unpaid labor, is usually required by some other entity (lender or I.R.S.) and it is information the farm operator should already have.

Objective 4

- Point out the speed and ease of processing and making corrections and comparisons to previous years.

Objective 5

- Emphasize that the historical standard, analyzing one's own farm over a period of years, is the best measure of performance that exists.

Objective 6

- Relate that information must be used to be of value to the business manager.

Objective 7

- Review unit 6, Net Worth Statement, of *Farm Business Records and Financial Statements.*

Objectives 8 and 9

- Review unit 6, Net Worth Statement, of *Farm Business Record and Financial Statements.*
- Review Unit 7, Income Statements, of *Farm Business Record and Financial Statements.*

Objective 10

- Emphasize the importance and benefits of the comparative net worth spread sheet (Assignment Sheet 3).

Objective 11

- Remember that "return" means the dollar amount left to pay remaining factors of production.

Objective 12

- Emphasize that income performance is dependent on the other measures and is, therefore, a superior measure when comparing farms which may have a different mix of enterprises.

Objective 13

- Discuss the common ways to measure farm business size and how they affect the analysis of a farm business.

Objective 14

- Discuss the ratio of capital investment per man-year for a farm business.

Objective 15

- Poll class for descriptions to measures of income performance. Write the responses on the overhead or board.

Objective 16

- Discuss the efficiency ratios for the farm while presenting examples of each.

Objective 17

- Use each formula presented in this objective to solve problems associated with measures of performance between investment and income.

APPLICATION

Objectives 18 and 19

- Use Assignment Sheets 1 and 2 to explain how each of these factors tell a portion of the financial story of the farm business.

  NOTE: Factors interrelate and some factors will have more meaning to one farm than another due to differing financial structure and enterprise performance within the farm business.

Objective 20

- Have class members complete Assignment Sheet 3.

EVALUATION

Written Test

- Explain to class members that they will be asked to demonstrate on the written test actions listed in the specific objectives.
- Give written test.

  NOTE: The written test may be given in sections if desired.

- Evaluate class members on assignment sheet activities if not previously done.
- Reteach and retest if necessary.
- Complete appropriate section of competency profile.
- Review individual and group performance in order to evaluate teaching methods. Adjust scope, sequence, or instructional approaches for additional lessons as required.

UNIT REFERENCE

- *Farm Business Management II* , Curriculum and Instructional Materials Center, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, 1982.

WHOLE FARM ANALYSIS

OBJECTIVE 1

Match terms associated with whole farm and detailed enterprise analysis to their correct definitions.

- **Average farm assets** – Assets determined from net worth statement by adding beginning farm assets to ending farm assets and dividing by two
- **Average net worth** – Equity determined from net worth statement by adding beginning net worth to the ending net worth and dividing by two
- **Book value** – Tax or cost basis of assets and liabilities, including adjustments and prior depreciation taken
- **Cash-flow summary** – Written historical record of cash flow showing actual cash income and expenses for a definite period of time, usually one year
- **Current value** – Cash value of assets based on actual cost or market value less sale expenses
- **Economies of scale** – Economic benefits arising because unit costs either decrease or increase as the size of the business and output are expanded
- **Fixed costs** – Costs which do not vary with changes in output

  EXAMPLES: Land payment; depreciation on machinery, equipment and buildings; machinery payment
- **Income statement** – Financial statement that lists cash and non-cash receipts and expenses of a farm business during a specified period of time, usually one year
- **Long-run** – Period of time that is long enough to change quantities of all resources used
- **Man-year** – Average amount of work a person can perform in an average work year using average technology

  NOTE: The standard used is 2,000 hours per year.
- **Net worth statement** – Financial statement that lists assets and liabilities of a farm business at a particular time, usually at the end of an accounting year
- **Short-run** – Period of time that is too short to permit quantities of particular resources used to vary
- **Total costs** – Sum of fixed and variable costs

- **Variable costs** – Costs which change with the level of output

  EXAMPLES: Feed, seed, fertilizer, fuel, veterinary medicine

OBJECTIVE 2 **State purposes of whole farm analysis.**

- To provide insights into the farm business
- To identify factors affecting profitability and efficiency of the farm business
- To help class member make better management decisions when farm records are kept over several years
- To allow class member to compare the farm business with various comparison standards

OBJECTIVE 3 **List resource information needed to complete a whole farm analysis.**

- Cash-flow summary (Form 6.2)
- Inventory of cash on hand (Form 6.2 or 6.3)
- Inventory of personal assets (Form 6.3)
- Inventory of machinery and equipment, buildings and improvements, and land (Form 6.3)
- Inventory of livestock (form 6.3)
- Inventory of feed, stored and growing crops, and supplies (Form 6.3)
- Record of credit accounts (Form 6.4)
- Actual or estimated hours of hired, family and operator labor
- Actual or estimated value of hired, family and operator labor
- Actual or estimated value of products used in the home
- Opportunity cost of total capital
- Total owned acres operated
- Total rented acres operated

  NOTE: Owned and rented acres are further broken down into crop, pasture, and other.

OBJECTIVE 4

List advantages and disadvantages of a computerized whole farm analysis.

Advantages

- Stores and classifies large volumes of information in a manner allowing quick retrieval
- Highlights income, expenses, and farm production; calls class member's attention to key analysis figures that give some indication of the farming operation's efficiency and quality of management
- Provides class member with up-to-date accounting summaries with which to exercise budget control
- Allows for quick retrieval of analysis information to develop summary analysis

Disadvantages

- Analysis is only as good as the information provided
- Outputs are only completed at end of year
- Accounting system may not be oriented toward a close integration of performance records and budget projections

OBJECTIVE 5

Match types of comparison standards from different information sources to their correct descriptions.

- **Budget comparison** – Determines whether striving for established goals is logical; compares realistic goals with actual performance
- **Historical records** – Demonstrates financial progress over a period of time; compares past and present resource management
- **Comparative performance** – Establishes standards of performance expressed in both physical and financial terms; compares class member's farm to similar farms

OBJECTIVE 6

Arrange in order steps in outlining a whole farm analysis.

1. Determine volume of business
2. Determine whether volume of business is too large or too small to provide a satisfactory income
3. Determine which enterprises were losers and which were winners
4. Determine why loser enterprises failed to return a profit
5. Determine the effect of expanding or contracting the size of an enterprise winner or loser

OBJECTIVE 7

State purposes of the net worth statement.

NOTE: A net worth statement is one of the common instruments used to measure financial progress in agriculture. It cannot measure profitability except to the extent of increases in net worth from year to year. It does not measure the replacement capacity or ability to meet financial obligations as they fall due.

- Measures present financial position
- Records growth in the farm business through changes in net worth
- Provides an indication of the amount of debt supported by various classes of assets
- Provides early warning through ratio analysis of problems that may arise in the short-run, intermediate, and long-run
- Reveals liquidity and solvency

OBJECTIVE 8

Match financial ratios found on net worth statements to their correct descriptions.

NOTE: The information below can be found on Form 6.5.

- **Current ratio** – Current assets divided by current liabilities
- **Debt asset ratio** – Total liabilities divided by total assets
- **Debt equity ratio** – Total liabilities divided by net worth
- **Net capital ratio** – Total assets divided by total liabilities
- **Percent equity** – Net worth divided by total assets x 100
- **Working asset ratio** – Current plus intermediate assets divided by current plus intermediate liabilities

OBJECTIVE 9

State purposes of the income statement.

- Measures profitability of the farm business over a specific period of time
- Makes profit and loss sources easier to identify
- Shows disposition of net farm income

OBJECTIVE 10

State ways in which a comparative income statement analysis may be used for analytical and comparative purposes.

- Reporting the return or loss to resources over time
- Showing relationship of income and expenses over time

  NOTE: Statements indicate whether increased efforts to control costs are warranted.

- Evaluating changes of capital investments over time

  NOTE: Capital investments that are not accompanied by increased income could be lead indicators of cash-flow problems and reduced future returns.

- Determining the farm business's capacity to undertake and service debt for expansion or investment purposes

OBJECTIVE 11

Match the returns to resources to their correct descriptions.

- **Net farm income** – Return to unpaid labor, net worth and management

  NOTE: Unpaid labor is operator and unpaid family labor.

- **Return to unpaid labor, total capital, and management** – Net farm income plus cash interest expense and an accrued unpaid interest adjustment

  NOTE: Total capital consists of both borrowed money and owners equity. In order to determine the return to total capital, interest (the cost of the borrowed capital) must be added back to net farm income.

- **Return to unpaid labor and management** – Measures the effectiveness of the operator and family's unpaid labor and management utilization

  NOTE: The formula for calculating return to unpaid labor and management is:

  Return to unpaid labor, total capital and management minus opportunity cost of total capital

- **Return to operater's labor, total capital, and management** – Return to the total capital invested in the operation and operator's labor and management

  NOTE: This return may be referred to as adjusted net farm income. It may be used to compare farm businesses using varying amounts of capital. The formula for calculating return to operator's labor, total capital and management is:

  (Return to unpaid labor and management plus opportunity cost of total capital) minus value of unpaid family labor

- **Return to total capital and management** – Balance of adjusted net farm income available to capital and management after an opportunity cost for operator's labor is removed

  NOTE: This return is useful in comparing alternative uses of capital. The formula for calculating return to total capital and management is:

  Return to operator's labor, total capital and management minus value of operator's labor

- **Return to management** – Balance representing the return to or management's claim on the remainder of adjusted net farm income

  NOTE: Remaining income plus value of operator's labor should be compared to potential local salaries. The formula for calculating return to management is:

  Return to total capital and management minus opportunity cost of total capital

- **Percent return to total capital** – Earning rate of the average farm assets in the farm business

  NOTE: If the return is greater than the cost of borrowed capital, this indicates a profitable use of borrowed capital. The formula for calculating percent return to total capital is:

  $$\frac{\text{Return to total capital and management}}{\text{Average farm assets}} \times 100$$

- **Return to equity capital and management** – Return to class member's net worth and management ability

  NOTE: The formula for calculating return to equity capital and management is:

  Net farm income minus total unpaid labor

- **Percent return to average equity** – Indicator of how efficiently equity capital is being used

  NOTE: Over a period of five years this figure should be equal to returns on alternative off-farm investments. It is a good measure of a farm business using very little borrowed capital. The formula for calculating percent return to average equity is:

$$\frac{\text{Return to equity capital and management}}{\text{Average farm net worth}} \times 100$$

- **Return per unpaid labor year** – Provides a measure to compare with non-farm family income estimates for the area

  NOTE: The formula for calculating return per unpaid labor year is:

$$\frac{\text{Return to unpaid labor and management}}{\text{Man-years unpaid labor}}$$

OBJECTIVE 12

Select from a list measures of performance useful in interpreting whole farm analysis.

- Size

  NOTE: Over the years, business size has generally been related with profitability. Business size is of interest because of possible economies of scale.

- Capital ratios
- Income performance
- Efficiency ratios

OBJECTIVE 13

Match common ways to measure farm business size to their correct descriptions.

- **Average farm assets** – Measure of average farm investment in a given year
- **Crop acres** – Superior measure of size if concerned with crop farms

  NOTE: This measure says nothing about productivity of land or adaptability to various enterprises and may not be meaningful in comparing livestock farms.

- **Man-years** – Measure of size in terms of a labor standard; the average amount of work a person can perform in an average work year using average technology

  NOTE: Apparent deficiencies of this measure include actual labor requirements which vary with level of mechanization; work accomplished varies by the person and his or her efficiency, and the economics of labor use.

- **Man-years total labor** – Measure of size in terms of the total operator, family, and hired labor performed in the farm business

  NOTE: This measure is determined by dividing the total labor utilized by 2,000 hours.

- **Man-years unpaid labor** – Measure of size in terms of the total operator and family labor performed in the farm business

  NOTE: This measure is determined by dividing the total unpaid labor by 2,000 hours.

- **Other acres** – Measure of non-productive acres

  EXAMPLES: Farmstead; fencelines; roads

- **Pasture acres** – Measure of non-crop acres used for livestock production

- **Total acres** – Measure of space

  NOTE: Total acres says nothing about amount of investment in the land, or productivity, adaptability, or profitability of land to various enterprises.

- **Value of farm production** – Measure of gross production from the land plus the value added to livestock above purchased feed and purchased livestock

  NOTE: Value added that is associated with basic farm production activities. Value of farm production can also be defined as the total farm income, both cash and inventory changes, less purchased feed and purchased feeder livestock.

- **Value of total annual inputs per farm** – Measure of production expenses incurred by the farm

  NOTE: Production expenses include cash operating expense plus a charge for capital and all labor used in the business. This is one of the better measures of size if similar rates are charged for similar inputs, particularly labor and land. Consideration also should be given to capital turnover and changes in price levels. Value of total annual inputs per farm may also be referred to as production expenses.

OBJECTIVE 14 **Discuss ratio of capital investment per man-year.**

- Is calculated by the average farm assets divided by man-years total labor
- Depends on class member's policy of valuing capital assets
- Does not include values of leased land or facilities
- Is difficult to define a meaningful standard
- Is best guide to comparing capital investment in class member's farm with the average of a group of farms

OBJECTIVE 15 **Match measures of income performance to their correct descriptions.**

- **Adjusted net farm income as a percentage of value of production** – Measure of efficiency after adjusting net cash income for changes in inventories, receivables, payables, and a charge for capital

  NOTE: A desirable goal for most farms is an adjusted net farm income of 30 percent or more of the value of farm production.

- **Adjusted net farm income as a percentage of investment** – Return to operator's labor, total capital, and management as a percentage of the average farm capital invested
- **Value of farm production as a percentage of investment** – Measure of the rate of capital turnover; an indicator of volume of capital used

  NOTE: Capital turnover can be used to measure the time it takes the farm to produce value equivalent to the investment in the farm business. A ratio equaling 25 percent means that it takes four years for the farm to "roll over" its capital. The lower the percentage factor, the longer the period of time required for capital turnover. A high percentage indicates greater volume and more efficient use of capital.

OBJECTIVE 16 **Match efficiency ratios for the farm to their correct descriptions.**

- **Investment per total farm acre** – Measure of size; superior to acres because capital investment includes capital in the form of land

  NOTE: There is a potential bias in favor of farms that have a high percentage of capital in relation to labor. An operation that has a high investment in machinery and buildings may show size but be a very unprofitable operation.

- **Investment per crop acre** – Indicator of land, livestock, and machinery investment

  NOTE: It is difficult to get a meaningful standard comparing the class member's farm with the average group of farms. In a low profit operation, an above average investment in capital per crop acre could indicate that land, livestock, and machinery are being employed inefficiently.

- **Value of farm production per man-year total labor** – Indicator of how productively labor was used

- **Value of farm production per $100 of production costs** – Indicator of the net earnings of the farm business

  NOTE: Earnings less than $100 indicate that value of farm production did not cover all the production expenses. A value of $100 indicates that all costs are covered. The higher the value, the higher economic profit of the business.

- **Machinery and equipment investment per total farm acre** – Average capital investment in machinery and equipment per farm acre

  NOTE: This figure should be considered along with value of production per man-year total labor. With high investment in machinery and equipment, the output per man also should be high.

- **Machinery and equipment investment per crop acre** – Average capital investment in machinery and equipment per crop acre

  NOTE: It is difficult to suggest a standard figure. The best guide is to compare class member's farm with the average of a group of similar farms.

- **Fuel costs per total farm acre** – Summary of all fuel, oil, and lube expenses per farm acre

  NOTE: When comparing figures for several years, this ratio may be useful in cash-flow projections.

- **Fuel costs per crop acre** – Summary of all fuel, oil, and lube expenses per crop acre

- **Fertilizer and chemical costs per total farm acre** – Summary of all fertilizers, herbicides, and other chemical expenses per farm acre

  NOTE: This ratio is useful in cash-flow planning.

- **Fertilizer and chemical costs per crop acre** – Summary of all fertilizers, herbicides, and other chemical expenses per crop acre

  NOTE: This ratio may be useful in comparing costs over several years with an average of similar type farms.

OBJECTIVE 17

Select from a list measures of performance between investment and income.

- **Rate of return to total capital and management**

  NOTE: This measure determines how well the farm operator is investing capital. A minimum figure above current interest rates at local savings institutions should be set. The following formula is used to calculate rate of return to capital:

$$\frac{\text{Return to total capital and management}}{\text{Average farm assets}} \times 100$$

- **Operating ratio**

  NOTE: The following formula is used to calculate operating ratio:

$$\frac{\text{Total input costs}}{\text{Gross farm income}} \times 100$$

  A good figure to shoot for is 40 percent. The lower the input costs are, the more efficient the farm manager

- **Rate of capital turnover**

  NOTE: The following formula is used to calculate rate of capital turnover:

$$\frac{\text{Value of farm production}}{\text{Average farm assets}} \times 100$$

  Depending on the enterprises, 50 percent is a general figure to strive for. This indicates efficiency of capital assets used. Rate of capital turnover also may be known as "gross income per $1,000 invested."

- **Overhead ratio**

  NOTE: The following formula is used to calculate overhead ratio:

  $$\frac{\text{Total overhead expenses}}{\text{Gross income}} \times 100$$

  Strive for a 30 percent rate. This figure shows when per unit overhead costs are declining because of increased output. If output drops, the figure will increase.

- **Rate of return to equity**

  NOTE: This measure determines how well the farm operator is investing capital. A minimum figure above current interest rates at local savings institutions should be set. The following formula is used to calculate rate of return to equity:

  $$\frac{\text{Return to total capital and management}}{\text{Equity (net worth)}} \times 100$$

ASSIGNMENT SHEET 1

WHOLE FARM ANALYSIS

II

OBJECTIVE 18

Complete an ***Oklahoma Farm Business Management Record Book*** **— Whole Farm Business Analysis Form 6.7.**

NAME______________________________SCORE ____

INTRODUCTION

Farm analysis is the climax to any record-keeping activity. It is only through this phase that the farmer gains insight into the farm business. Without it, record-keeping is little more than accounting for tax liability. Comparing production and performance is a more enjoyable activity to class members and may serve to give helpful leads for farm business improvements.

DIRECTIONS

Complete the Whole Farm Business Analysis (form 6.7) on page 21 using the following information.

NOTE: Form numbers are from the *Oklahoma Farm Business Management Record Book.*

NET WORTH STATEMENT INFORMATION (Forms 6.3 and 6.4)

Farm net worth change (Book value)	$ 25,000.00
Farm net worth change (Current value)	$ 33,000.00
Accrued, unpaid interest adjustment	$ 2,075.00
Beginning farm assets	$325,000.00
Ending farm assets	$385,000.00
Beginning net worth	$178,750.00
Ending net worth	$211,750.00

INCOME STATEMENT INFORMATION (Form 6.6)

Net farm income	$27,000.00

CASH-FLOW SUMMARY INFORMATION (Form 6.2)

Cash interest expense	$15,000.00

MONTHLY LABOR SUMMARY (Form 4.8)

Unpaid family labor	600 hours
Operator labor	2,400 hours
Hired labor	2,125 hours
	(Total cost: $8,500.00)

ASSUMED INFORMATION

Opportunity rate of return on capital	9.0%
Estimated operator labor and hired labor	$6.00 per hour

FORM 6.7

WHOLE FARM BUSINESS ANALYSIS FOR 19____

RESOURCES		
LABOR	Time	**Value**
1 Unpaid Family Labor (form 4.9)	Hrs.	$
2 Operator's Labor (form 4.9)	Hrs.	$
3 Total Unpaid Labor (add line 1 + line 2)	Hrs.	$
4 Hired Labor (forms 4.6 and 4.7)	Hrs.	$
5 Total Labor Utilized (add line 3 + line 4)	Hrs.	$
A MAN YEARS TOTAL LABOR (line 5 2000)	Yrs.	
B MAN YEARS UNPAID LABOR (line 3 2000)	Yrs.	
CAPITAL		**Value**
6 Average Farm Assets (form 6.3 line 36) (Beginning + Ending) ÷ 2	$	
7 Average Farm Net Worth (form 6.4 line 71) (Beginning + Ending) ÷ 2	$	
8 Opportunity Rate of Return on Capital (estimate)	%	
9 Opportunity Cost of Total Capital (line 6 X line 8)		$
10 Opportunity Cost of Equity Capital (line 7 X line 8)		$
FARM NET WORTH CHANGE		
C Current Value (form 6.4, line 71, col 9)		$
D Book value (form 6.4, line 71, col. 12)		$
INTEREST EXPENSE		
11 Cash Interest Expense (form 6.2, lines 35 + 36)	$	
12 Accrued Unpaid Interest Adjustment (form 6.4 line 60 col. 9 or col. 12)	$	
13 Accrued Interest Expense (add line 11 + line 12)		$

RETURN TO RESOURCES		
		Value
E NET FARM INCOME (form 6.6 line 14)		$
14 Accrued Interest Expense (line 13)	$	
F RETURN TO UNPAID LABOR, TOTAL CAPITAL AND MANAGEMENT (add line E + line 14)		$
15 Opportunity Cost of Total Capital (line 9)	$	
G RETURN TO UNPAID LABOR AND MANAGEMENT (line F minus line 15)		$
16 Opportunity Cost of Total Capital (line 9)	$	
17 Value of Unpaid Family Labor (line 1)	$	
H RETURN TO OPERATOR'S LABOR, TOTAL CAPITAL, AND MANAGEMENT (line G plus line 16 minus line 17)		$
18 Value of Operator's Labor (line 2)	$	
I RETURN TO TOTAL CAPITAL AND MANAGEMENT (line H minus line 18)		$
19 Opportunity Cost of Total Capital (line 9)	$	
J RETURN TO MANAGEMENT (line I minus line 19)		$
K PERCENT RETURN TO TOTAL CAPITAL (line I line 6) X 100		%
L RETURN TO EQUITY CAPITAL AND MANAGEMENT (line E minus line 3)		$
M PERCENT RETURN TO AVERAGE EQUITY CAPITAL (line L line 7) X 100		%
N RETURN PER UNPAID LABOR YEAR (line G line B)		$

OBJECTIVE 19

Complete an *Oklahoma Farm Business Management Record Book* – Measures of Performance Form 6.8.

NAME______________________________SCORE ____

INTRODUCTION

Comparative analysis using numerous standards of comparison often is needed for an accurate assessment of farm business performance. No single ratio is adequate and several performance indicators are interrelated; therefore, interpretations must be made with caution.

It is important that analysis include the same set of measurements from year-to-year so that meaningful comparisons can be made over time. Due to the variable nature of farm prices and production, any one year's results may not be too meaningful.

Continuing analysis also may be used to compare class member's farm with farm record summaries that may be published on an area, state, or national basis.

Some of the more common measures of performance are included in the *Oklahoma Farm Business Management Record Book.*

DIRECTIONS

Complete the Measures of Performance (form 6.8) on page 25 using the following information.

NOTE: Form numbers are from the *Oklahoma Farm Business Management Record Book.*

CASH-FLOW SUMMARY INFORMATION (Form 6.2)

Operating sales	$217,000.00
Sales of livestock purchased for resale	$ 63,000.00
Breeding livestock sales	$ 3,000.00
Sale of other capital assets	$ 0.00
Feed purchases	$ 8,000.00
Livestock purchased for resale	$ 47,500.00
Breeding livestock purchased	$ 3,000.00
Cash interest expense	$ 15,000.00
Fuel and oil expense	$ 8,250.00
Fertilizer and chemical expense	$ 15,000.00
Total operating expenses	$135,000.00

NET WORTH STATEMENT INFORMATION (Forms 6.3 and 6.4)

Net change in accounts receivable	$ 1,075.00
Livestock inventory change	$30,000.00
Feed, crops, and supplies inventory change	$ 1,925.00
Net change in feed and livestock accounts payable	$ 700.00

INCOME STATEMENT INFORMATION (Form 6.6)

Beginning machinery and equipment	$65,000.00
Ending machinery and equipment	$60,000.00

WHOLE FARM ANALYSIS INFORMATION (Form 6.7)

Average farm assets	$355,000.00
Return to operator's labor, total capital and management	$ 41,975.00
Man-years total labor	2.56
Man-years unpaid labor	1.50

SUPPLEMENTAL RECORDS INFORMATION (Forms S-9 and S-10)

Crop acres	750
Pasture acres	200
Other acres	50

FORM 6.8 **MEASURES OF PERFORMANCE** **FOR** 19___

SIZE	(1) OWNED	(2) RENTED	(3) TOTAL (1+2)
A CROP ACRES (form S-10)	Ac	Ac	Ac
B PASTURE ACRES (form S-10)	Ac	Ac	Ac
C OTHER ACRES (form S-10)	Ac	Ac	Ac
D TOTAL ACRES OPERATED (add A + B + C)	Ac	Ac	Ac
E AVERAGE FARM ASSETS (form 6.7 line 6)			$
Value of Farm Production			
1 Operating Sales (form 6.2 line A)		$	
2 Sale of Livestock Purchased for Resale (form 6.2 line 17)		$	
3 Breeding Livestock Sales (form 6.2 line 18)		$	
4 Gain or Loss on Capital Assets Excluding Livestock [form 6.2 line 19 - (lines 50+51) + form 6.6 line 10 col. 3 + line 11 col. 3]		$	
5 Net Change in Account Receivable (form 6.6 line 4. col. 3)		$	
6 Livestock Inventory Change (form 6.6 line 8 col. 3)		$	
7 Feed, Crops and Supplies Inventory Change (form 6.6 line 9 col. 3)		$	
8 Less Feed Purchases (form 6.2 line 28)		$	
9 Less Livestock Purchased for Resale (form 6.2 line 48)		$	
10 Less Breeding Livestock Purchases (form 6.2 line 49)		$	
11 Less Change in Account Payable (form 6.6 line 5 col. 3)		$	
12 Value of Home Used Products (form 6.6 line 13)		$	
F VALUE OF FARM PRODUCTION (add lines 1 thru 12)			$
13 Return to Operators Labor, Total Capital and Management (Adjusted Net Farm Income) (form 6.7 line H)		$	
G VALUE OF TOTAL ANNUAL INPUTS PER FARM (Production Expenses) (line F minus line 13)			$
Man-Year			
H MAN YEARS TOTAL LABOR (form 6.7 line A)			. Yrs
I MAN YEARS UNPAID LABOR (form 6.7 line B)			Yrs

CAPITAL RATIOS		
J CAPITAL INVESTMENT PER MAN-YEAR (line E line H)		$
INCOME PERFORMANCE		
K ADJUSTED NET FARM INCOME AS A PERCENTAGE OF VALUE OF PRODUCTION (line 13 line F) X 100		%
L ADJUSTED NET FARM INCOME AS A PERCENTAGE OF INVESTMENT (line 13 line E) X 100		%
M VALUE OF FARM PRODUCTION AS A PERCENTAGE OF INVESTMENT (Rate of Capital Turnover) (line F line E) X 100		%
EFFICIENCY RATIOS FOR THE FARM		
N. INVESTMENT PER TOTAL FARM ACRE (line E ÷ line D col. 3)		$
O. INVESTMENT PER CROP ACRE (line E ÷ Line A col. 3)		$
P VALUE OF FARM PRODUCTION PER MAN-YEAR TOTAL LABOR (line F line H)		$
Q. VALUE OF FARM PRODUCTION PER $100 OF PRODUCTION COSTS line F ÷ (line G ÷ 100)		$
14. Machinery and Equipment Investment (form 6.3 line 31) (Beginning + Ending) ÷ 2	$	
R. MACHINERY AND EQUIPMENT INVESTMENT PER TOTAL FARM ACRE (line 14 ÷ line D col. 3)		$
S. MACHINERY AND EQUIPMENT INVESTMENT PER CROP ACRE (line 14 ÷ line A col. 3)		$
T. FUEL COSTS PER TOTAL FARM ACRE (form 6.2 line 31 ÷ line D col. 3)		$
U FUEL COSTS PER CROP ACRE (form 6.2 line 31 ÷ line A col. 3)		$
V. FERTILIZER AND CHEMICAL COSTS PER TOTAL FARM ACRE (form 6.2 line 26 + 29) ÷ (line D col. 3)		$
W FERTILIZER AND CHEMICAL COSTS PER CROP ACRE (form 6.2 line 26 + 29) ÷ (line A col. 3)		$
X. INTEREST AS A % OF OPERATING EXPENSE $\frac{\text{(form 6.7 line 13)}}{\text{(form 6.2 lines D+48)}} \times 100$		%

ASSIGNMENT SHEET 3

WHOLE FARM ANALYSIS

II

OBJECTIVE 20

Complete a step-by-step outline of your whole farm analysis.

NAME______________________________SCORE ____

INTRODUCTION

After completing and evaluating your net worth statement, income statement, cash-flow summary, and whole farm analysis, it may be necessary to pursue the analysis. The following procedure may be helpful in pointing out weaknesses in the farm business. Most of the questions may be answered with a "yes" or "no."

NOTE: It will be evident that a very elaborate accounting system would be needed to give definitive answers to all the questions cited or implied in the following outline. Questions may be made more manageable by considering the following:

1. The first step in getting the right answer is to ask the right question. Even though answers to these questions may be imperfect, they are more likely to be in the right direction if the proper question is asked in the first place;
2. Judgement is still a very necessary source of information in most decision-making. The same "judgment," arising from your past decisions, can often take up where your farm records leave off; and,
3. An imperfect answer based in part on judgment may be better than no answer at all.

DIRECTIONS

Answer the following questions to assist you in completing a step-by-step outline of your whole farm analysis.

STEP 1. Is the business large enough to earn a satisfactory level of income? Yes______ No______.
Is the volume of business a serious limitation?
Yes______ No______

NOTE: You may refer to Income Statement form 6.6.

If the answer is yes (large enough), go to step two.

If the answer is no (not large enough), what resource most limits volume of production? See the following examples.

____

____

____

____

____

____

____

EXAMPLES:

LIMITED SOURCE	CONSIDER THE FOLLOWING ALTERNATIVES
Land	More intensive use of cropland;
	Higher or lower rates of fertilization;
	Expand "vertically" through livestock if financing is available but avoid reducing intensity of land use unless presently too intensive;
	Consider alternative enterprises, such as specialty crops;
	Rent or buy more cropland
Capital	Rent more land, if available;
	Use "high" capital turnover livestock;
	Example: Stockers, swine, dairy
	Produce more or less per acre, especially grain crops;
	Own fewer machines, hire more work done and use machines you own for custom work
Labor	Rely on low labor requirement livestock;
	Example: Feeder pigs and beef
	Raise more grain and less hay or silage;
	Time production for less labor competition between crops and livestock;
	Use larger and newer machinery and equipment for faster work and fewer delays;
	Invest time in planning systems rather than wasting time operating situations;
	Eliminate unnecessary work;
	Consider two or three-person unit

STEP 2. Which enterprises were losers and which were winners?

NOTE: Refer to detailed enterprise analysis.

- List the headings for:

  EXAMPLES: Stockers; swine; fattening; cow-calf

  "WINNERS"

  a. ____________________

  b. ____________________

  c. ____________________

  d. ____________________

  e. ____________________

  f. ____________________

  "LOSERS"

  a. ____________________

  b. ____________________

  c. ____________________

  d. ____________________

  e. ____________________

  f. ____________________

- Were prices and weather conditions reasonably "normal"?

  1. If normal, go on to Step 3 (Losers) or Step 4 (Winners)
  2. If abnormal, either
     - Adjust the costs and returns to reflect more "normal" weather and prices and ask Step 2 again; or
     - Examine prior year's records and ask Step 2 again

STEP 3. Why did the "loser" fail to return a profit (or a larger profit)? See examples below.

NOTE: Refer to the detailed enterprise analysis.

EXAMPLES:

PROBLEM	CONSIDER THE FOLLOWING ALTERNATIVES
Prices received were lower than what other farmers received	Was quality inferior because of poor handling? Examples: Wet grain; hay storage; poor storage Was timing of sales poor because of selling at seasonal lows, not following outlook information, or no storage facilities?; Was the market inferior because of small size, inefficiency, lack of quality market outlets or lack of competition?
Production per unit was too low	Examples: Per acre; per cow; Per cwt. Diseases and parasites; Weeds and insects; Timing of field operations; Inadequate fertilizer rates; "Poor doing" livestock; Too many low profit crops; Unbalanced or costly rations; Too "busy" to attend to details that pay
Costs were too high	Is adequate time being spent in studying the market, shopping, and bargaining for price? Is storage costing too much? Could purchases be timed better to take advantage of seasonal lows in price? Which costs could be reduced or eliminated if the enterprise was dropped or reduced? Can cheaper items be substituted? Is each cost paying for itself?
Fixed or ownership costs of buildings, machinery and equipment too high (acres, tons, head)?	Was capacity of these items fully used? Could cost have been spread over more units?

STEP 4. **What would be the effect of expanding or contracting the size of either a "winner" or a "loser"?**

NOTE: It should be pointed out that risk, utilization of available resources, and protection against bankruptcy, may be objectives just as important as increasing profits. In north central Oklahoma, alfalfa may be a profitable enterprise, but labor and equipment constraints and risk prevent putting the whole farm in alfalfa production.

Which costs would:

- Neither be increased nor decreased by moderate increases or decreases

  EXAMPLE: Fixed costs associated with fixed equipment

- Increase more than proportionately if size were moderately increased

  EXAMPLES: New buildings, new equipment

- Continue as a cost, but would be usable in another enterprise if this enterprise was reduced or dropped

- Increase or decrease as size is increased or decreased, but less than proportionately to change in size

- **Increase or decrease in direct proportion to units (acres, tons, head)**

  ____

  ____

Could buying and selling be improved if larger enterprise size made possible:

- Volume discounts on purchases? ______________________
- Volume premiums on sales? ______________________
- Better product quality or handling? ______________________
- More attention to management or marketing? ______________
- More uniform lots of products sold? ______________________

Would larger enterprise size bring:

- Better management? ______________________
- More difficult management? ______________________

Would expansion necessitate an unfavorable shift to high cost inputs?

EXAMPLE: Crop residues and pasture to silage and hay

____

____

____

If the enterprises were dropped, could the land, labor, and capital it now uses be more profitably employed elsewhere or would parts go unused?

____

____

____

If the enterprises were expanded, would the added benefits exceed the added costs and reduced returns brought about by the change?

NOTE: You may refer to partial budgets.

____

____

If the enterprises were reduced or dropped, would costs be lowered more than incomes or would the reverse be more likely?

____

____

OBJECTIVE 18

See the following page for the completed form 6.7.

FORM 6.7

WHOLE FARM BUSINESS ANALYSIS FOR 19___

RESOURCES

LABOR	Time	**Value**
1. Unpaid Family Labor (form 4.9)	600 Hrs.	$ 3600
2. Operator's Labor (form 4.9)	2,400 Hrs.	$ 14,400
3. Total Unpaid Labor (add line 1 + line 2)	3,000 Hrs.	$ 18,000
4. Hired Labor (forms 4.6 and 4.7)	2,125 Hrs.	$ 12,750
5. Total Labor Utilized (add line 3 + line 4)	5,125 Hrs.	$ 30,750
A. MAN YEARS TOTAL LABOR (line 5 2000)	2.56 Yrs.	
B. MAN YEARS UNPAID LABOR (line 3 2000)	1.5 Yrs.	
CAPITAL		**Value**
6. Average Farm Assets (form 6.3 line 36) (Beginning + Ending) - 2	$ 355,000	
7. Average Farm Net Worth (form 6.4 line 71) (Beginning + Ending) - 2	$ 195,250	
8. Opportunity Rate of Return on Capital (estimate)	9 %	
9. Opportunity Cost of Total Capital (line 6 X line 8)		$ 31,950
10. Opportunity Cost of Equity Capital (line 7 X line 8)		$ 17,572
FARM NET WORTH CHANGE		
C. Current Value (form 6.4, line 71, col 9)		$ 33,000
D. Book value (form 6.4, line 71, col. 12)		$ 25,000
INTEREST EXPENSE		
11. Cash Interest Expense (form 6.2, lines 35 + 36)	$ 15,000	
12. Accrued Unpaid Interest Adjustment (form 6.4 line 60 col. 9 or col. 12)	$ 1,000	
13. Accrued Interest Expense (add line 11 + line 12)		$

RETURN TO RESOURCES

		Value
E. NET FARM INCOME (form 6.6 line 14)		$ 27,000
14. Accrued Interest Expense (line 13)	$ 16,000	
F. RETURN TO UNPAID LABOR, TOTAL CAPITAL, AND MANAGEMENT (add line E + line 14)		$ 43,000
15. Opportunity Cost of Total Capital (line 9)	$ 31,950	
G. RETURN TO UNPAID LABOR AND MANAGEMENT (line F minus line 15)		$ 11,050
16. Opportunity Cost of Total Capital (line 9)	$ 31,950	
17. Value of Unpaid Family Labor (line 1)	$ 3,600	
H. RETURN TO OPERATOR'S LABOR, TOTAL CAPITAL, AND MANAGEMENT (line G plus line 16 minus line 17)		$ 39,400
18. Value of Operator's Labor (line 2)	$ 14,400	
I. RETURN TO TOTAL CAPITAL AND MANAGEMENT (line H minus line 18)		$ 25,000
19. Opportunity Cost of Total Capital (line 9)	$ 31,950	
J. RETURN TO MANAGEMENT (line I minus line 19)		$ 6950
K. PERCENT RETURN TO TOTAL CAPITAL (line I line 6) X 100		7.0%
L. RETURN TO EQUITY CAPITAL AND MANAGEMENT (line E minus line 3)		$ 9,000
M. PERCENT RETURN TO AVERAGE EQUITY CAPITAL (line L line 7) X 100		4.6%
N. RETURN PER UNPAID LABOR YEAR (line G line B)		$ 7,366

OBJECTIVE 19 See the following page for the completed form 6.8.

FORM 6.8 **MEASURES OF PERFORMANCE** **FOR** **19___**

SIZE	(1) OWNED	(2) RENTED	(3) TOTAL (1+2)
A CROP ACRES (form S-10)	240 Ac	510 Ac	750 Ac
B PASTURE ACRES (form S-10)	100 Ac	100 Ac	200 Ac
C OTHER ACRES (form S-10)	25 Ac	25 Ac	50 Ac
D TOTAL ACRES OPERATED (add A+B+C)	365 Ac	635 Ac	1000 Ac
E AVERAGE FARM ASSETS (form 6.7 line 6)			$355,000
Value of Farm Production			
1 Operating Sales (form 6.2 line A)		$212,000	
2 Sale of Livestock Purchased for Resale (form 6.2 line 17)		$ 63,000	
3 Breeding Livestock Sales (form 6.2 line 18)		$ 3,000	
4 Gain or Loss on Capital Assets Excluding Livestock [form 6.2 line 19 - (lines 50+51) + form 6.6 line 10 col. 3 + line 11 col. 3]		$ 0	
5 Net Change in Account Receivable (form 6.6 line 4 col. 3)		$ 1,075	
6 Livestock Inventory Change (form 6.6 line 8 col. 3)		$ 30,000	
7 Feed, Crops and Supplies Inventory Change (form 6.6 line 9 col. 3)		$ 1,925	
8 Less Feed Purchases (form 6.2 line 28)		$ 8,000	
9 Less Livestock Purchased for Resale (form 6.2 line 48)		$ 47,500	
10 Less Breeding Livestock Purchases (form 6.2 line 49)		$ 3,000	
11 Less Change in Account Payable (form 6.6 line 5 col. 3)		$ 700	
12 Value of Home Used Products (form 6.6 line 13)		$ 500	
F VALUE OF FARM PRODUCTION (add lines 1 thru 12)			$375,700
13 Return to Operators Labor, Total Capital and Management (Adjusted Net Farm Income) (form 6.7 line H)		$ 39,400	
G VALUE OF TOTAL ANNUAL INPUTS PER FARM (Production Expenses) (line F minus line 13)			$ 336,300
Man Year			
H MAN YEARS TOTAL LABOR (form 6.7 line A)			2.56 Yrs
I MAN YEARS UNPAID LABOR (form 6.7 line B)			1.5 Yrs

CAPITAL RATIOS		
J CAPITAL INVESTMENT PER MAN-YEAR (line E line H)		$138,671
INCOME PERFORMANCE		
K ADJUSTED NET FARM INCOME AS A PERCENTAGE OF VALUE OF PRODUCTION (line 13 line F) X 100		10.4 %
L ADJUSTED NET FARM INCOME AS A PERCENTAGE OF INVESTMENT (line 13 line E) X 100		11.1 %
M VALUE OF FARM PRODUCTION AS A PERCENTAGE OF INVESTMENT (Rate of Capital Turnover) (line F line E) X 100		1.05 %
EFFICIENCY RATIOS FOR THE FARM		
N. INVESTMENT PER TOTAL FARM ACRE (line E ÷ line D col. 3)		$ 355
O. INVESTMENT PER CROP ACRE (line E ÷ Line A col. 3)		$ 473
P VALUE OF FARM PRODUCTION PER MAN-YEAR TOTAL LABOR (line F line H)		$ 146,757
Q VALUE OF FARM PRODUCTION PER $100 OF PRODUCTION COSTS line F ÷ (line G ÷ 100)		$ 111.72
14 Machinery and Equipment Investment (form 6.3 line 31) (Beginning + Ending) ÷ 2	$62,500	
R. MACHINERY AND EQUIPMENT INVESTMENT PER TOTAL FARM ACRE (line 14 ÷ line D col. 3)		$ 62.50
S MACHINERY AND EQUIPMENT INVESTMENT PER CROP ACRE (line 14 ÷ line A col. 3)		$ 83.30
T. FUEL COSTS PER TOTAL FARM ACRE (form 6.2 line 31 ÷ line D col. 3)		$ 8.25
U FUEL COSTS PER CROP ACRE (form 6.2 line 31 ÷ line A col. 3)		$ 11.00
V FERTILIZER AND CHEMICAL COSTS PER TOTAL FARM ACRE (form 6.2 line 26 + 29) ÷ (line D col. 3)		$ 15.00
W FERTILIZER AND CHEMICAL COSTS PER CROP ACRE (form 6.2 line 26 + 29) ÷ (line A col. 3)		$ 20.00
X INTEREST AS A % OF OPERATING EXPENSE $\frac{\text{(form 6.7 line 13)}}{\text{(form 6.2 lines D+48)}} \times 100$		11.8 %

OBJECTIVE 20

Verify that the class member has completed the assignment sheet and grade as completed or not completed.

WRITTEN TEST

WHOLE FARM ANALYSIS

II

NAME ______________________ SCORE ____

OBJECTIVE 1

Match terms associated with whole farm and detailed enterprise analysis to their correct definitions. Write the correct letters in the blanks. (Questions continued on following page.)

____ 1. Equity determined from net worth statement by adding beginning net worth to the ending net worth and dividing by two

____ 2. Tax or cost basis of assets and liabilities, including adjustments and prior depreciation taken

____ 3. Cash values of assets based on actual cost or market value less sales expenses

____ 4. Costs which do not vary with changes in output

____ 5. Costs which change with the level of output

____ 6. Sum of fixed and variable costs

____ 7. Period of time that is too short to permit quantities of particular resources used to vary

____ 8. Period of time that is long enough to change quantities of all resources used

____ 9. Economic benefits arising because unit costs either decrease or increase as size of the business and output are expanded

____ 10. Written historical record of cash flow showing actual cash income and expenses for a definite period of time, usually one year

a. Variable costs

b. Book value

c. Long-run

d. Current value

e. Average net worth

f. Short-run

g. Fixed costs

h. Economies of scale

i. Total costs

j. Man-year

k. Cash-flow summary

l. Net worth statement

m. Average farm assets

n. Income statement

____ 11. Assets determined from net worth statement by adding beginning farm assets to ending farm assets to ending farm assets and dividing by two

____ 12. Summary of cash and non-cash receipts and expenses during a specified period of time

____ 13. Statement showing the financial condition of the farm business at a definite point in time

____ 14. Average amount of work a person can perform in an average work year using average technology

OBJECTIVE 2 **State purposes of whole farm analysis.** Write three purposes in the blanks below.

____

____

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____

OBJECTIVE 3

List resource information needed to complete a whole farm analysis. Write five types of resource information in the blanks below.

OBJECTIVE 4

List advantages and disadvantages of a computerized whole farm analysis. Write four advantages and three disadvantages in the blanks below.

ADVANTAGES

DISADVANTAGES

OBJECTIVE 5

Match types of comparison standards from different information sources to their correct descriptions. Write the correct letters in the blanks.

_____ 1. Demonstrate financial progress over a period of time; compares past and present resource management performance

_____ 2. Establishes standards of performance expressed in both physical and financial terms; compares class member's farm to similar farms

_____ 3. Determines whether striving for established goals is logical; compares realistic goals with actual performance

a. Historical records

b. Comparative

c. Budget comparison

OBJECTIVE 6

Arrange in order steps in outlining a whole farm analysis. Write a "1" before the first step, a "2" before the second step, and so on.

_____ Determine whether volume of business is too large or too small to provide a satisfactory income

_____ Determine which enterprises were losers and which were winners

_____ Determine why loser enterprises failed to return a profit

_____ Determine the effect of expanding or contracting the size of an enterprise winner or loser

_____ Determine volume of business

OBJECTIVE 7

State purposes of the net worth statement. Write five purposes in the blanks below.

____

____

____

____

____

OBJECTIVE 8

Match financial ratios found on net worth statements to their correct descriptions. Write the correct letters in the blanks.

_____ 1. Current assets divided by current liabilities

_____ 2. Current plus intermediate assets divided by current plus intermediate liabilities

_____ 3. Total assets divided by total liabilities

_____ 4. Total liabilities divided by net worth

_____ 5. Net worth divided by total assets x 100

_____ 6. Total liabilities divided by total assets

a. Percent equity

b. Debt equity ratio

c. Net capital ratio

d. Working asset ratio

e. Current ratio

f. Debt asset ratio

OBJECTIVE 9

State purposes of the income statement. Write three purposes in the blanks below.

OBJECTIVE 10

State ways in which a comparative income statement analysis may be used for analytical and comparative purposes. Write four ways in the space provided.

OBJECTIVE 11

Match the returns to resources to their correct descriptions. Write the correct letters in the blanks provided.

_____ 1. Earning rate of the average farm assets in the farm business

_____ 2. Return to class member's net worth and management ability

_____ 3. Return to unpaid labor, net worth and management

_____ 4. Balance of adjusted net farm income available to capital and management after an opportunity cost for operator's labor is removed

_____ 5. Indicator of how efficiently equity capital is being used

_____ 6. Net farm income plus cash interest expense and an accrued unpaid interest adjustment

_____ 7. Return to the total capital invested in the operation and operator's labor and management

_____ 8. Balance representing the return to or management's claim on the remainder of adjusted net farm income

_____ 9. Measures the effectiveness of the operator and family's unpaid labor and management utilization

_____ 10. Provides a measure to compare with non-farm family income estimates for the area

a. Return per unpaid labor year

b. Percent return to average equity

c. Percent return to total capital

d. Return to equity capital and management

e. Return to management

f. Net farm income

g. Return to unpaid labor and management

h. Return to total capital and management

i. Return to unpaid labor, total capital, and management

j. Return to operator's labor, total capital, and management

OBJECTIVE 12

Select from a list measures of performance useful in interpreting whole farm analysis. Write an "X" in the blank before each correct answer.

_____1. Operating sales

_____2. Size

_____3. Capital ratios

_____4. Income performance

_____5. Assets

_____6. Efficiency ratios

OBJECTIVE 13

Match common ways to measure farm business size to their correct descriptions. Write the correct letters in the blanks provided.

_____ 1. Measure of non-crop acres used for livestock production

_____ 2. Measure of size in terms of the total operator and family labor performed in the farm business

_____ 3. Measure of space

_____ 4. Measure of size in terms of a labor standard; the average amount of work a person can perform in an average work year using average technology

_____ 5. Measure of production expenses incurred by the farm

_____ 6. Superior measure of size if concerned with crop farms

_____ 7. Measure of average farm investment in a given year

_____ 8. Measure of gross production from the land plus the value added to livestock above purchased feed and purchased livestock

_____ 9. Measure of non-productive acres

____ 10. Measure of size in terms of the total operator, family, and hired labor performed in the farm business

a. Average farm asset

b. Total acres

c. Man-years

d. Value of total annual inputs per farm

e. Value of farm production

f. Man-year's total labor

g. Crop acres

h. Pasture acres

i. Man-year's unpaid labor

j. Other acres

OBJECTIVE 14

Discuss ratio of capital investment per man-year. Write your answer in the space below.

____

____

____

____

____

____

____

OBJECTIVE 15

Match measures of income performance to their correct descriptions. Write the correct letters in the blanks provided.

____ 1. Return to operator's labor, total capital, and management as a percentage of the average farm capital invested

____ 2. Measure of the rate of capital turnover; an indicator of volume of capital used

____ 3. Measure of efficiency after adjusting net cash income for changes in inventories, receivables, payables, and a charge for capital

a. Value of farm production as a percentage of investment

b. Adjusted net farm income as a percentage of value of production

c. Adjusted net farm income as a percentage of investment

OBJECTIVE 16

Match efficiency ratios for the farm to their correct descriptions. Write the correct letters in the blanks provided.

_____ 1. Summary of all fertilizers, herbicides, and other chemical expenses per crop acre

_____ 2. Summary of all fuel, oil, and lube expenses per farm acre

_____ 3. Indicator of land, livestock, and machinery investment

_____ 4. Measure of size; superior to acres because capital investment includes capital in the form of land

_____ 5. Indicator of how productively labor was used

_____ 6. Indicator of the net earnings of the farm business

_____ 7. Average capital investment in machinery and equipment per farm acre

_____ 8. Summary of all fuel, oil, and lube expenses per crop acre

_____ 9. Average capital investment in machinery and equipment per crop acre

_____ 10. Summary of all fertilizers, herbicides, and other chemical expenses per farm acre

a. Value of farm production per man-year total labor

b. Fertilizer and chemical costs per crop acre

c. Fuel costs per total farm acre

d. Fuel costs per crop acre

e. Investment per total farm acre

f. Value of farm production per $100 of production costs

g. Machinery and equipment investment per crop acre

h. Fertilizer and chemical costs per total farm acre

i. Investment per crop acre

j. Machinery and equipment investment per total farm acre

OBJECTIVE 17

Select from a list measures of performance between investment and income. Mark each correct answer with an "X" in the blanks provided.

_____1. Rate of return to total capital

_____2. Rate of return to banker

_____3. Overhead ratio

_____4. Operating ratio

_____5. Rate of capital turnover

_____6. Rate of return to equity

NOTICE

The following assignment sheets are not part of the writen test. If these activities have not been completed, check with your instructor.

OBJECTIVE 18

Complete an *Oklahoma Farm Business Management Record Book* – Whole Farm Business Analysis Form 6.7.

SCORE ________

OBJECTIVE 19

Complete an *Oklahoma Farm Business Management Record Book* – Measures of Performance Form 6.8.

SCORE ________

OBJECTIVE 20

Use a net worth spread sheet to analyze net worth.

SCORE ________

WHOLE FARM ANALYSIS

OBJECTIVE 1

1. e
2. b
3. d
4. g
5. a
6. i
7. f
8. c
9. h
10. k
11. m
12. n
13. l
14. j

OBJECTIVE 2

Answer should include three of the following:

- To provide insights into the farm business
- To identify factors affecting profitability and efficiency of the farm business
- To help class member make better management decisions when farm records are kept over several years
- To allow class member to compare the farm business with various comparison standards

OBJECTIVE 3

Answers should include any five of the following:

- Cash-flow
- Inventory of cash on hand
- Inventory of personal assets
- Inventory of machinery and equipment, buildings and improvements, and land
- Inventory of livestock
- Inventory of feed, stored and growing crops, and supplies
- Record of credit accounts
- Actual or estimated hours of hired, family, or operator labor
- Actual or estimated value of hired, family, or operator labor
- Actual or estimated value of products used in the home

- Opportunity cost of total capital
- Total owned acres operated
- Total rented acres operated

OBJECTIVE 4

ADVANTAGES

Stores and classifies large volumes of information in a manner allowing quick retrieval

Highlights income, expenses, and farm production; calls class member's attention to key analysis figures that give some indication of the farm operation's efficiency and quality of management

Provides class member with up-to-date accounting summaries with which to exercise budget control

Allows for quick retrieval of analysis information to develop summary analysis

DISADVANTAGES

Analysis is only as good as the information provided

Outputs are only completed at end of year

Accounting system may not be oriented toward a close integration of performance records and budget projections

OBJECTIVE 5

1. a
2. b
3. c

OBJECTIVE 6

2, 3, 4, 5, 1

OBJECTIVE 7

- Measures present financial position
- Records growth in the farm business through changes in net worth
- Provides an indication of the amount of debt supported by various classes of assets
- Provides early warning through ratio analysis of problems that may arise in the short-run, intermediate, and long-run
- Reveals liquidity and solvency

OBJECTIVE 8

1. e
2. d
3. c
4. b
5. a
6. f

OBJECTIVE 9

- Measures profitability of the farm business over a specific period of time
- Makes profit and loss sources easier to find
- Shows disposition of net farm income

OBJECTIVE 10

- Reporting the return or loss to resources over time
- Showing relationship of income and expenses over time
- Evaluating changes of capital investments over time
- Determining the farm business's capacity to undertake and service debt for expansion or investment purposes

OBJECTIVE 11

1. c
2. d
3. f
4. h
5. b
6. i
7. j
8. e
9. g
10. a

OBJECTIVE 12

2, 3, 4, 6

OBJECTIVE 13

1. h
2. i
3. b
4. c
5. d
6. g
7. a
8. e
9. j
10. f

OBJECTIVE 14

Answer should include:

- Is calculated by the average farm assets divided by man-years total labor
- Depends on class member's policy of valuing capital assets
- Does not include values of leased land or facilities
- Is difficult to define a meaningful standard

OBJECTIVE 15

1. c
2. a
3. b

OBJECTIVE 16

1. b
2. c
3. i
4. e
5. a
6. f
7. j
8. d
9. g
10. h

OBJECTIVE 17	1, 3, 4, 5, 6
OBJECTIVES 18-20	Refer to answers to Assignment Sheets 1 through 3.

ENTERPRISE ANALYSIS

III

UNIT OBJECTIVE

After completing this unit, the class member should be able to analyze and interpret the performance of each enterprise that makes up the whole farm unit. The class member will demonstrate these competencies by completing the assignment sheet and written test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the class member should be able to:

1. Match terms associated with enterprise analysis to their correct definitions.
2. State purposes of detailed enterprise analysis.
3. Select from a list guidelines for allocating entries to overhead enterprise.
4. State methods of increasing enterprise returns.
5. Define measures of enterprise earnings.
6. Match measures of enterprise size and volume to their correct descriptions.
7. Select from a list measures of crop production efficiency.
8. Select from a list measures of livestock earnings efficiency.
9. Select from a list measures of livestock production efficiency.
10. Complete a livestock and crop enterprise analysis. (Assignment Sheet 1)

PREPARATION

- Order materials to supplement unit.

INTRODUCTION

- Emphasize the importance of complete and accurate records that are needed for enterprise analysis.
- Explain that enterprise analysis supplements the whole farm analysis and is extremely useful in completing a step-by-step outline of the whole farm analysis.
- Point out that if internal transfers are completed properly, the enterprise analysis will point out where resources are best employed.

DELIVERY

Objective 1

- Point out the importance of defining terms for common understanding.

Objective 2

- Emphasize the importance of the enterprise analysis in supplying information for management decision-making.

Objective 3

- Point out that allocation of overhead expenses is critical to the accuracy of the enterprise analysis.

Objective 4

- Relate back to the step-by-step outline of the whole-farm analysis.

Objective 5

- Point out that return categories directly correspond to return categories of the whole-farm analysis.

Objective 6

- Point out that per unit analysis factors can be extremely useful in setting marketing plans by setting asking price.

Objectives 7 through 9

- Point out that each operation will have different factors that will be of primary concern.

APPLICATION

Objective 10

- Assist each class member in completing an enterprise analysis. (Assignment Sheet 1)

EVALUATION

Written Test

- Explain to class members that they will be asked to demonstrate on the written test actions listed in the specific objectives.
- Give written test.

  NOTE: The written test may be given in sections if desired.
- Evaluate class members on assignment sheet activities if not previously done.
- Reteach and retest if necessary.
- Complete appropriate section of competency profile.
- Review individual and group performance in order to evaluate teaching methods. Adjust scope, sequence, or instructional approaches for additional lessons as required.

UNIT REFERENCES

- *Farm Business Management II*, Curriculum and Instructional Materials Center, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, 1982.
- James, Sydney C. and Everett Stoneberg, *Farm Accounting and Business Analysis*, 2nd ed., Iowa State University Press, Ames, Iowa 1979.
- *Oklahoma Farm Business Management Record Book*, Curriculum and Instructional Materials Center, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, Rev. September 1986.
- Osburn, Donald D. and Kenneth C. Schneeberger, *Modern Agriculture Management*, Reston Publishing Company, Inc., Reston, Virginia, 1978.
- German, Lehi and Robert Denker, *Farm Business Analysis, Instructor's Handbook*, Instructional Materials Laboratory, University of Missouri-Columbia, Columbia, Missouri, n.d.

OBJECTIVE 1

Match terms associated with enterprise analysis to their correct definitions.

- **Competing enterprises** – Enterprises that use the same resources at the same time

  EXAMPLE: Oats and wheat compete for limited amount of land. An increase in a planting of one enterprise results in a decreased planting of the other.

- **Complimentary enterprises** – Enterprises in which the production of one contributes to the production of the other

  EXAMPLE: Wheat crop contributes forage for a stocker operation.

- **Enterprise** – An economic unit within the farm business

  EXAMPLE: Wheat, stockers, swine, cow-calf

- **Enterprise accounting** – Detailed recording of all income and expense items directly related to a specific enterprise

- **Fixed cost** – Costs which do not vary with changes in level of production

  EXAMPLE: Land payment, depreciation, taxes, and insurance.

- **Overhead** – Fixed or variable costs that are difficult to allocate to a specific enterprise

- **Supplementary enterprises** – Enterprises which are noncompeting or independent of other enterprises on the farm

  EXAMPLE: Custom harvesting enterprise utilizes farm labor and equipment that would not otherwise be used.

- **Total cost or cost of production** – The sum of fixed and variable cost

- **Variable cost** – Costs which change with the level of production

  EXAMPLE: Feed, seed, fertilizer, fuel, veterinary medicine

OBJECTIVE 2

State purposes of detailed enterprise analysis.

- To pinpoint level of profitability of enterprises
- To identify factors affecting profitability of enterprises
- To determine relative efficiency of enterprises
- To indicate enterprises which could be increased or decreased to increase profits
- To aid class member in decision making by using historical records to reveal levels of performance from year to year

OBJECTIVE 3

Select from a list guidelines for allocating entries to overhead enterprise.

NOTE: To analyze each enterprise, the class member should allocate among the farm business enterprises farm receipts and expenditures recorded in the overhead enterprise. No method is available that guarantees correct allocation of overhead entries.

- Allocate among enterprises in proportion to the income contributed by each enterprise to the total farm business

  EXAMPLE: If wheat, swine, and cattle make up 40, 50, and 10 percent respectively of gross farm income, then divide overhead entries in that proportion.

- Allocate building expenses according to the total space occupied by an enterprise
- Allocate crop expenses according to proportion of acres to total acres

  EXAMPLE: If total crop acres equal 500 acres and harvested wheat acres total 300 acres, allocate 60 percent of expenses to wheat.

NOTE: The class member should consider whether land is all of the same quality, whether land is interchangeable for different crops, and whether crops are dry land or irrigated.

OBJECTIVE 4

State methods of increasing enterprise returns.

- Increase size of enterprise

  EXAMPLE: Buy or rent additional acreage, increase herd size.

- Increase output

  NOTE: Increased output may be accomplished by more intense management.

  EXAMPLE: Use higher yielding crop varieties.

- Decrease fixed and variable costs associated with enterprises
- Increase selling price by utilizing better marketing methods

OBJECTIVE 5

Define measures of enterprise earnings.

- **Return above variable expenditures** – amount of receipts exceeding variable expenditures

  NOTE: Operator should consider discontinuing enterprise if receipts do not exceed variable expenditures.

- **Net return above variable and fixed expenditures** – measures total profitability of the enterprise

  NOTE: The following formula is used to calculate net return above variable and fixed expenditures:

  Total Enterprise Receipts minus Total Enterprise Expenditures equals Net Return Above Variable and Fixed Expenditures

OBJECTIVE 6

Match measures of enterprise size and volume to their correct descriptions.

- **Total gross income** – Measures the total income produced by the enterprise

  NOTE: Total gross income is calculated by adding the livestock/crop gross sales and total other income and subtracting livestock/crop purchases.

- **Total cash expenses** – Measures the total cash outflow charged to the enterprise

  NOTE: Total cash expenses are the total of all current farm expenses (including overhead). Non-cash items such as accrued interest, accrued taxes, and depreciation may need to be included.

- **Per unit analysis factors** – Measure returns and/or expenses associated with production units of various enterprises

  NOTE: Per unit analysis factors are dependent upon the type of enterprise. The following table lists the different types of enterprises and the per unit analysis factors for the different enterprises.

  EXAMPLES:

TYPE OF ENTERPRISE	PER UNIT ANALYSIS FACTORS
General enterprise	Dollars/Unit
Beef cow	Dollars/Cwt. produced; Dollars/Head
Livestock feeding	Dollars/Cwt. produced; Dollars/Head; Pounds/Head
Dairy (milk production)	Dollars/Cwt. milk; Dollars/Head
Sheep breeding	Dollars/Cwt. produced; Dollars/Head
Swine breeding	Dollars/Cwt. produced; Dollars/Pig produced; Dollars/Litter
Poultry	Dollars/Cwt. produced; Dollars/Head; Dollars/Dozen/Head
Other livestock	Dollars/Cwt. produced; Dollars/Head
Grain and cash crops	Dollars/Acre; Dollars/Unit harvested

OBJECTIVE 7

Select from a list measures of crop production efficiency.

- Yields per acre

  NOTE: Yields per acre vary from year to year. Class members probably will want to compare their yields to county averages. The following formula is used to calculate yields per acre:

  $$\frac{\text{Total production}}{\text{Number of acres}}$$

- Gross value of crops per acre

  NOTE: This measure combines yield and price, giving an indication of which crops provide the highest gross returns. The following formula is used to calculate gross value of crops per acre:

  Price x Yield per acre

- Machinery and power costs per acre

  NOTE: Costs vary widely from farm to farm. Higher costs do not always indicate higher yields or profits. The following formula is used to calculate machinery and power costs per acre:

  $$\frac{\text{Machinery operating costs + Depreciation}}{\text{Number of acres harvested}}$$

- Fertilizer, insecticide, and herbicide costs per acre:

  NOTE: The following formula is used to calculate fertilizer, insecticide, and herbicide costs per acre:

  $$\frac{\text{Fertilizers + Lime + Herbicides + Insecticides}}{\text{Number of acres harvested}}$$

- Fuel cost per acre

  NOTE: The following formula is used to calculate fuel cost per acre:

  $$\frac{\text{Fuel}}{\text{Number of acres harvested}}$$

- Total production costs per unit

  NOTE: These records will be most useful over several years. They indicate the profitability of the enterprise on a per bushel or per acre basis. The following formula is used to calculate total production costs per unit:

  $$\frac{\text{Total production costs}}{\text{Number of units}}$$

OBJECTIVE 8

Select from a list measures of livestock earnings efficiency.

- Livestock returns per $100 feed fed

  NOTE: This measure will vary due to the type of livestock enterprise. Comparisons to similar farms will be most useful. The following formula is used to calculate livestock returns per $100 feed fed:

  $$\frac{\text{Gross income livestock enterprise (\$)}}{\text{Total cost feed fed to that enterprise (\$)}} \div 100$$

- Total cost of 100 pounds produced

  NOTE: The following formula is used to calculate total cost of 100 pounds produced:

  $$\frac{\text{All livestock expense per enterprise}}{\text{Pounds of livestock produced per enterprise}} \div 100$$

- Feed costs per 100 pounds produced

  NOTE: This measure expresses feed expenses related to output and can be influenced by cost of concentrates, supplements, and roughage. The following formula is used to calculate feed costs per 100 pounds produced:

  $$\frac{\text{Cost of supplements} + \text{Grains} + \text{Roughage} + \text{Pasture}}{\text{Pounds of livestock produced}} \div 100$$

OBJECTIVE 9

Select from a list measures of livestock production efficiency.

- Pounds of concentrates, grains, and roughage per pound of gain

  NOTE: This measure indicates the amount of feed fed relative to the amount of weight gained. It should be compared to efficient operations in the area or class averages. The following formula is used to calculate pounds of concentrates, grains, and roughage per pound of gain:

  $$\frac{\text{Pounds of concentrates, grains, and roughage}}{\text{Pounds of gain.}}$$

- Average weaning weight

  NOTE: This measure is useful to indicate feed and rate of gain efficiency over several production periods. The following formula is used to calculate the average weaning weight:

  $$\frac{\text{Total pounds of calves weaned}}{\text{Number of calves weaned}}$$

- Weight weaned per cow

  NOTE: The following formula is used to calculate weight weaned per cow:

  $$\frac{\text{Total pounds of calves weaned}}{\text{Number of cows over 2 years of age}}$$

- Average days in feedlot

  NOTE: This measure indicates feed conversion efficiency and should be compared to efficient enterprises in the area or class averages. The following formula is used to calculate average days in feedlot:

  $$\frac{\text{Total animal days on feed}}{\text{Number of feeders}}$$

- Percent calf crop

  NOTE: The following formula is used to calculate percent calf crop:

  $$\frac{\text{Cows calving}}{\text{Cows bred}} \times 100$$

  A good rule of thumb is to calve over 95% and raise over 90% to weaning weight.

- Average daily gain

  NOTE: The following formula is used to calculate average daily gain:

  $$\frac{\text{Ending weight - Beginning weight}}{\text{Number of days on feed}}$$

  A good rule of thumb for feeder cattle is 2.5 to 2.75 pounds per day gain in the finishing period. Pigs should be gaining at least one pound for four pounds of feed in the finishing period.

- Pigs farrowed or weaned per litter

  NOTE: The following formula is used to calculate pigs farrowed or weaned per litter:

  $$\frac{\text{Total number of pigs farrowed or weaned}}{\text{Number of gilts and sows farrowed}}$$

One standard to consider is 9.5 pigs or better from sows, eight pigs or better from gilts, and 85% or better of pigs farrowed reach market weight.

- Feed per dozen eggs

  NOTE: The following formula is used to calculate feed per dozen eggs:

  $$\frac{\text{Total feed fed (pounds)}}{\text{Dozens of eggs produced}}$$

  This figure indicates feed conversion efficiency.

- Eggs per hen

  NOTE: The following formula is used to calculate eggs per hen:

  $$\frac{\text{Number of eggs per period}}{\text{Number of birds}}$$

ASSIGNMENT SHEET 1

ENTERPRISE ANALYSIS

III

OBJECTIVE 10

Complete a livestock and crop enterprise analysis.

NAME______________________________SCORE ____

INTRODUCTION

Whole farm analysis information can be applied to individual enterprises. In fact, class members who specialize in only one product have only one enterprise. Where there is more than one major enterprise, it is desirable to make some analysis to determine efficiency and to obtain data for future farm planning. Summarizing data for future planning is the most important purpose of enterprise analysis.

Enterprise analysis is an accrual record of all income and expense attributed to each of the designated enterprises during the current year, whether they are paid or not, and whether they were external transactions or internal transfers within the farm business.

The enterprise analysis form is organized into the following subgroups.

Enterprise summary

- *Livestock/crop sales* may include the following items depending on the type of enterprise:
  - Raised sales
  - Product sales
  - Sales of items purchased for resale
  - Grain and forage fed
  - Ending inventory of enterprise
  - Death or casualty loss
- *Livestock/crop purchases* may include the following items depending on the type of enterprise:
  - Purchase of items for resale
  - Births
  - Beginning inventory of enterprise

  NOTE: Enterprise inventory is the value of livestock or crop production currently on hand.

- *Total other receipts* includes income allocated to an enterprise but not included in sales or purchases, and net inventory change of products held for sale.

  EXAMPLES: Patronage refunds, supplies sold, insurance refunds, and wool

- *Total receipts* is the sum of livestock/crop total production and other income.

- *Total cash expenditures* include current operating expenses allocated to the enterprise and net inventory changes.

  EXAMPLES: Feed, hired labor, veterinary medicine, freight or trucking.

- *Return above variable expenditures* is the amount of receipts exceeding variable expenditures.

- *Dollars/cwt. produced* is calculated by dividing the dollar amount by the total hundredweight of livestock produced.

- *Dollars/unit harvested* is calculated by dividing the dollar amount by the total units harvested.

  NOTE: The accuracy of hundredweight produced will depend upon accurate reporting of pounds on the Livestock Production Summary form. Several items influence the accuracy of this number of pounds: the number of pounds of livestock purchased for resale, capital assets purchased, births, beginning and ending inventories, raised sales, product sales, sales of livestock purchased for resale, sales of capital assets, grain and forage fed, and death losses. Total units of a crop harvested may be obtained from the Crop Production Summary forms.

- *Dollars/head* is calculated by dividing the dollar amount by total head of livestock sold during the year.

- *Dollars/harvested acre* is calculated by dividing the dollar amount by the total harvested acres for the enterprise.

DIRECTIONS

PART I

Using the information in the following table, complete an enterprise analysis for a beef fattening enterprise and a wheat enterprise.

STOCKER ENTERPRISE

Receipts	
Stocker sales	450 Head
Stocker sale avg. wt.	875 lbs
Stocker sale price	$.84 per lb
Patronage refunds	$346.50
Misc. income	$70.90
Expenses	
Supplies	$2,500
Rent	$30,866
Labor hired	$6,250
Interest	$16,250
Feed	$18,500
Veterinary medicine	$9,000
Freight	$4,000
Gas, fuel, oil	$3,750
Insurance	$1,000
Utilities	$2,500
Stocker purchases	125 head
Stocker purchase avg. weight	405.61 lbs
Stocker purchase price	$.98 per lb
Other information	
Death loss	15 head
Beginning stocker inventory	375 head
Beginning stocker inventory average weight	437.92 lbs
Beginning stocker inventory average price	$ .98 per lb
Ending stocker inventory	35 head
Ending stocker inventory average weight	875 lbs
Ending stocker inventory average price	$ .84 per lb
Depreciation allocated to stocker enterprise	$ 2,646.51

WHEAT ENTERPRISE

Receipts

Sale of raised wheat	$ 29,700.00
Sale of straw hay	$ 1,400.00
Ending operating inventory	$ 20,250.00
Beginning operating inventory	$ 20,250.00
Product inventory change	$ 0.00

Expenses

Hired labor	$ 2,266.47
Seeds and plants	$ 902.34
Fertilizer	$ 8,500.00
Machine hire	$ 2,250.00
Supplies	$ 225.00
Fuel	$ 860.96
Cash rent	$ 5,625.00
Insurance	$ 506.25
Utilities	$ 150.00
Repairs	$ 3,200.00

Other information

Total acres harvested	225 acres
Total bushels harvested	9,000 bushels
Depreciation allocated to wheat	$ 1,039.02
Unpaid operator and family labor	150 hours
Opportunity cost of labor	$ 6.00/hr.
Interest on operating investment	9.0 %
Price per bushel	$ 3.30
Yield	40

LIVESTOCK ENTERPRISE SUMMARY DESCRIPTION	HEAD #	POUNDS #	DOLLARS $	$/HEAD (_____) head	$/CWT. (_____) cwt. prod.
I. RECEIPTS					
A. Beginning Inventory					
B. Purchases					
C. Births					
D. Total Available (A + B + C)					
E. Sales					
F. Deaths					
G. Ending Inventory					
H. Total Decreases (E + F + G)					
I. Total Production (H – D)					
J. Other Receipts:					
____________________					
____________________					
K. Total Gross Receipts (I + J)					
II. VARIABLE EXPENDITURES					
Breeding Fees					
Feed					
Freight and Trucking					
Gas, Fuel, and Oil					
Insurance					
Labor Hired					
Interest					
Rent					
Supplies					
Utilities					
Vet., Medicine					
Misc. Expenditures:					
____________________					
____________________					
L. Total Variable Expenditures					
III. RETURNS ABOVE VARIABLE EXPENDITURES (K – L)					
IV. FIXED EXPENDITURES					
M. Depreciation					
N. Real Estate Taxes					
O. Mortgage Interest					
P. Other ____________________					
Q. Total Fixed Expenditures (M + N + O + P)					
R. Total Variable & Fixed Expenditures (L + Q)					
S. Net Returns above Variable & Fixed Expenditures (K – R)					

V. BREAKEVEN ANALYSIS

T. Breakeven Price to cover Variable Expenditures

(Line L + Line B) divided by Line D (pounds) = ($________ + $________) ÷ __________ = $__________

U. Breakeven Gain to Cover Variable Expenditures

(Line L divided by Line E) X 100 = ($________ ÷ $________) X 100 = __________

V. Breakeven Price to cover Variable and Fixed Expenditures

(Line R + Line B) divided by Line D (pounds) = ($________ + $________) ÷ __________ = $__________

W. Breakeven Gain to cover Variable and Fixed Expenditures

(Line R divided by Line E) X 100 = ($________ ÷ $________) X 100 = __________

CROP ENTERPRISE SUMMARY DESCRIPTION	UNITS (bu., lbs., tons, etc.)	DOLLARS $	$/ACRE (______) acres	$/UNIT (______) units
I. RECEIPTS				
A. Total Production	______			
B. Sales	______	______	______	______
C. Remaining Inventory (A – B)	______	______	______	______
D. Other Income (Please list):				
Government Payments		______	______	______
______		______	______	______
______		______	______	______
E. Total Receipts (B + C + D)		______	______	______
II. VARIABLE EXPENDITURES				
Chemicals		______	______	______
Fertilizer		______	______	______
Gas, Fuel & Oil		______	______	______
Insurance		______	______	______
Labor Hired		______	______	______
Machine Hire		______	______	______
Rent		______	______	______
Repairs		______	______	______
Seed, Plants		______	______	______
Storage		______	______	______
Supplies		______	______	______
Utilities		______	______	______
Misc. Expenditures:				
______		______	______	______
______		______	______	______
______		______	______	______
F. Total Variable Expenditures		______	______	______
III. RETURNS ABOVE VARIABLE EXPENDITURES (E – F)		______	______	______
IV. FIXED EXPENDITURES				
G. Depreciation		______	______	______
H. Real Estate Taxes		______	______	______
I. Mortgage Interest		______	______	______
J. Other ______		______	______	______
K. Total Fixed Expenditures (G + H + I + J)		______	______	______
L. Total Variable & Fixed Expenditures (F + K)		______	______	______
M. Net Returns above Variable & Fixed Expenditures (E – L)		______	______	______

V. BREAKEVEN ANALYSIS

N. Breakeven Price to Cover Variable Expenditures
(Line F divided by Line A) = $________ ÷ $________ = $________

O. Breakeven Yield Per Acre to Cover Variable Expenditures
(Line F divided by Price) divided by acres = ($_______ ÷ $_______) ÷ _______ = _______

P. Breakeven Price to Cover Variable & Fixed Expenditures
(Line L divided by Line A) = $________ ÷ $________ = $________

Q. Breakeven Yield Per Acre to Cover Variable & Fixed Expenditures
(Line L divided by Price) divided by acres = ($_______ ÷ $_______) ÷ _______ = _______

DIRECTIONS

PART II

Using the enterprise analysis forms on the following page, complete an analysis of a major enterprise on your farm.

LIVESTOCK ENTERPRISE SUMMARY DESCRIPTION	HEAD #	POUNDS #	DOLLARS $	$/HEAD (______) head	$/CWT. (______) cwt. prod.
I. RECEIPTS					
A. Beginning Inventory					
B. Purchases					
C. Births					
D. Total Available (A + B + C)					
E. Sales					
F. Deaths					
G. Ending Inventory					
H. Total Decreases (E + F + G)					
I. Total Production (H – D)					
J. Other Receipts:					
______________					
______________					
K. Total Gross Receipts (I + J)					
II. VARIABLE EXPENDITURES					
Breeding Fees					
Feed					
Freight and Trucking					
Gas, Fuel, and Oil					
Insurance					
Labor Hired					
Interest					
Rent					
Supplies					
Utilities					
Vet., Medicine					
Misc. Expenditures:					
______________					
______________					
L. Total Variable Expenditures					
III. RETURNS ABOVE VARIABLE EXPENDITURES (K – L)					
IV. FIXED EXPENDITURES					
M. Depreciation					
N. Real Estate Taxes					
O. Mortgage Interest					
P. Other ______________					
Q. Total Fixed Expenditures (M + N + O + P)					
R. Total Variable & Fixed Expenditures (L + Q)					
S. Net Returns above Variable & Fixed Expenditures (K – R)					

V. BREAKEVEN ANALYSIS

T. Breakeven Price to cover Variable Expenditures

(Line L + Line B) divided by Line D (pounds) = ($________ + $________) ÷ ________ = $________

U. Breakeven Gain to Cover Variable Expenditures

(Line L divided by Line E) X 100 = ($________ ÷ $________) X 100 = ________

V. Breakeven Price to cover Variable and Fixed Expenditures

(Line R + Line B) divided by Line D (pounds) = ($________ + $________) ÷ ________ = $________

W. Breakeven Gain to cover Variable and Fixed Expenditures

(Line R divided by Line E) X 100 = ($________ ÷ $________) X 100 = ________

CROP ENTERPRISE SUMMARY

DESCRIPTION	UNITS (bu., lbs., tons, etc.)	DOLLARS $	$/ACRE (______) acres	$/UNIT (______) units
I. RECEIPTS				
A. Total Production	______			
B. Sales	______	______	______	______
C. Remaining Inventory (A − B)	______	______	______	______
D. Other Income (Please list):				
Government Payments		______	______	______
________________		______	______	______
________________		______	______	______
E. Total Receipts (B + C + D)		______	______	______
II. VARIABLE EXPENDITURES				
Chemicals		______	______	______
Fertilizer		______	______	______
Gas, Fuel & Oil		______	______	______
Insurance		______	______	______
Labor Hired		______	______	______
Machine Hire		______	______	______
Rent		______	______	______
Repairs		______	______	______
Seed, Plants		______	______	______
Storage		______	______	______
Supplies		______	______	______
Utilities		______	______	______
Misc. Expenditures:				
________________		______	______	______
________________		______	______	______
________________		______	______	______
F. Total Variable Expenditures		______	______	______
III. RETURNS ABOVE VARIABLE EXPENDITURES (E − F)		______	______	______
IV. FIXED EXPENDITURES				
G. Depreciation		______	______	______
H. Real Estate Taxes		______	______	______
I. Mortgage Interest		______	______	______
J. Other ____________		______	______	______
K. Total Fixed Expenditures (G + H + I + J)		______	______	______
L. Total Variable & Fixed Expenditures (F + K)		______	______	______
M. Net Returns above Variable & Fixed Expenditures (E − L)		______	______	______

V. BREAKEVEN ANALYSIS

N. Breakeven Price to Cover Variable Expenditures
(Line F divided by Line A) = $______ ÷ $______ = $______

O. Breakeven Yield Per Acre to Cover Variable Expenditures
(Line F divided by Price) divided by acres = ($______ ÷ $______) ÷ ______ = ______

P. Breakeven Price to Cover Variable & Fixed Expenditures
(Line L divided by Line A) = $______ ÷ $______ = $______

Q. Breakeven Yield Per Acre to Cover Variable & Fixed Expenditures
(Line L divided by Price) divided by acres = ($______ ÷ $______) ÷ ______ = ______

OBJECTIVE 10

PART I

See next page for completed livestock and crop enterprise summary.

LIVESTOCK ENTERPRISE SUMMARY	HEAD #	POUNDS #	DOLLARS $	$/HEAD (500) head	$/CWT. ( ) cwt. prod.
DESCRIPTION					
I. RECEIPTS					
A. Beginning Inventory	375	164,220	160,935	429.16	98
B. Purchases	125	30,701.53	49,687.50	397.50	98
C. Births	0				
D. Total Available (A + B + C)	500	214,921.53	210,622.50	421.25	
E. Sales	450	277,830	330,750	735	94
F. Deaths	15				
G. Ending Inventory	35	30,625	25,725	735	84
H. Total Decreases (E + F + G)	500	308,455	356,475	712.95	
I. Total Production (H – D)	0	93,533.47	145,852.50	291.70	
J. Other Receipts:					
Patronage Refunds			346.50	.69	
Misc. Income			70.90	.14	
K. Total Gross Receipts (I + J)			146,269.90	292.53	
II. VARIABLE EXPENDITURES					
Breeding Fees			0	0	0
Feed			18,500	37	20
Freight and Trucking			4,000	8	6
Gas, Fuel, and Oil			3,750	7.5	4
Insurance			1,000	2	1
Labor Hired			6,250	12.5	7
Interest			16,500	33	17
Rent			30,866	61	33
Supplies			2,500	5	3
Utilities			2,500	5	3
Vet., Medicine			9,000	18	10
Misc. Expenditures:					
			0	0	0
L. Total Variable Expenditures			0	0	0
III. RETURNS ABOVE VARIABLE EXPENDITURES (K – L)			94.866	189	103.00
IV. FIXED EXPENDITURES					
M. Depreciation			2,646.51	5.29	3
N. Real Estate Taxes			0	0	0
O. Mortgage Interest			0	0	0
P. Other			0	0	0
Q. Total Fixed Expenditures (M + N + O + P)			2,646.51	5.29	3.00
R. Total Variable & Fixed Expenditures (L + Q)			97,512.51	194.29	106.00
S. Net Returns above Variable & Fixed Expenditures (K – R)			48,757.39	9.824	

V. BREAKEVEN ANALYSIS

T. Breakeven Price to cover Variable Expenditures

(Line L + Line B) divided by Line D (pounds) = ($94,966 + $49,687.50) ÷ 214,921.53 = $ .67

U. Breakeven Gain to Cover Variable Expenditures

(Line L divided by Line E) X 100 = ($51,403.90 ÷ $ .84) X 100 = 61,195

V. Breakeven Price to cover Variable and Fixed Expenditures

(Line R + Line B) divided by Line D (pounds) = ($95,512.51 + $49,687.50) ÷ 214,921.53 = $ .68

W. Breakeven Gain to cover Variable and Fixed Expenditures

(Line R divided by Line E) X 100 = ($48,757.39 ÷ $ .84) X 100 = 58,044

CROP ENTERPRISE SUMMARY

DESCRIPTION	UNITS (bu., lbs., tons, etc.)	DOLLARS $	$/ACRE (____) acres	$/UNIT (____) units
I. RECEIPTS				
A. Total Production	9,000			
B. Sales	9,000	29,700	132	3.30
C. Remaining Inventory (A − B)	0	0	0	0
D. Other Income (Please list):				
Government Payments		1,400	6.22	.15
________		0	0	0
________		0	0	0
E. Total Receipts (B + C + D)		31,100	138.22	3.45
II. VARIABLE EXPENDITURES				
Chemicals		0	0	0
Fertilizer		8,500	37.77	.94
Gas, Fuel & Oil		860.96	4.27	.095
Insurance		506.25	2.25	.06
Labor Hired		2266.47	10.07	.25
Machine Hire		2250	10	.25
Rent		5625	25	.625
Repairs		3200	14.22	.35
Seed, Plants		902.34	4.01	.10
Storage		0	0	0
Supplies		225	1.00	.025
Utilities		150	.66	.02
Misc. Expenditures:				
________		0	0	0
________		0	0	0
________		0	0	0
F. Total Variable Expenditures		24,486.02	108.83	2.72
III. RETURNS ABOVE VARIABLE EXPENDITURES (E − F)		6,613.98	29.39	.73
IV. FIXED EXPENDITURES				
G. Depreciation		1,039.02	4.62	.12
H. Real Estate Taxes		0	0	0
I. Mortgage Interest		0	0	0
J. Other *Labor 150 x $6*		900	4.00	.10
K. Total Fixed Expenditures (G + H + I + J)		1,939.02	8.62	.22
L. Total Variable & Fixed Expenditures (F + K)		26,425.04	117.44	2.94
M. Net Returns above Variable & Fixed Expenditures (E − L)		4,674.96	20.78	.51

V. BREAKEVEN ANALYSIS

N. Breakeven Price to Cover Variable Expenditures
(Line F divided by Line A) = $ 24,486.02 ÷ $ 9,000 = $ 2.72

O. Breakeven Yield Per Acre to Cover Variable Expenditures
(Line F divided by Price) divided by acres = ($ 24,486.02 ÷ $ 3.30) ÷ 225 = 32.98

P. Breakeven Price to Cover Variable & Fixed Expenditures
(Line L divided by Line A) = $ 26,425.04 ÷ $ 9,000 = $ 2.94

Q. Breakeven Yield Per Acre to Cover Variable & Fixed Expenditures
(Line L divided by Price) divided by acres = ($ 26,425.04 ÷ $ 3.30) ÷ 225 = 35.59

PART II

Ensure that form is filled out completely.

WRITTEN TEST

ENTERPRISE ANALYSIS

III

NAME______________________________SCORE ____

OBJECTIVE 1

Match terms associated with enterprise analysis to their correct definitions. Write the correct letters in the blanks.

_____ 1. Costs which change with the level of production

_____ 2. An economic unit within the farm business

_____ 3. Costs which do not vary with changes in level of production

_____ 4. Enterprises in which the production of one contributes to the production of the other

_____ 5. The sum of fixed and variable cost

_____ 6. Enterprises that use the same resources at the same time

_____ 7. Detailed recording of all income and expense items directly related to a specific enterprise

_____ 8. Fixed or variable costs that are difficult to allocate to a specific enterprise

_____ 9. Enterprises which are noncompeting or independent of other enterprises on the farm

a. Variable cost

b. Supplementary enterprises

c. Fixed cost

d. Overhead

e. Enterprise

f. Complimentary enterprises

g. Total cost or cost of production

h. Enterprise accounting

i. Competing enterprises

OBJECTIVE 2 **State purposes of detailed enterprise analysis.** Write five purposes.

____

____

____

____

____

____

____

____

____

____

OBJECTIVE 3 **Select from a list guidelines for allocating entries to overhead enterprise.**

____1. Allocate among enterprises in proportion to the income contributed by each enterprise to the total farm business

____2. Allocate building expenses according to the total space occupied by an enterprise

____3. Allocate crop expenses according to proportion of acres to total acres

OBJECTIVE 4

State methods of increasing enterprise returns. Write your answers in the blanks below.

____

____

____

____

____

____

____

____

OBJECTIVE 5

Define measures of enterprise earnings. Write your answers in the blanks below.

Return above variable expenditures–

____

____

____

Net return above variable and fixed expenditures–

____

____

____

OBJECTIVE 6

Match measures of enterprise size and volume to their correct descriptions. Write the correct letters in the blanks provided.

_____ 1. Measure the total cash outflow charged to the enterprise

_____ 2. Measures the total income produced by the enterprise

_____ 3. Measure returns and/or expenses associated with production units of various enterprises

a. Total gross income

b. Per unit analysis factors

c. Total cash expenses

OBJECTIVE 7

Select from a list measures of crop production efficiency. Write an "X" in the blank before each correct answer.

____1. Yields per square mile

____2. Gross value of crops per row

____3. Fertilizer, insecticide, and herbicide costs per acre

____4. Total production costs per unit

____5. Machinery and power costs per row

____6. Machinery and power costs per acre

____7. Gross value of crops per acre

____8. Yields per acre

OBJECTIVE 8

Select from a list measures of livestock earnings efficiency. Write an "X" in the blank before each correct answer.

____1. Livestock returns per $20 feed fed

____2. Feed costs per animal

____3. Total cost of 100 pounds produced

____4. Livestock returns per $100 feed fed

____5. Feed costs per 100 pounds produced

OBJECTIVE 9

Select from the list measures of livestock production efficiency. Write an "X" in the blank before each correct answer.

____1. Pounds of implants per pound of gain

____2. Weight weaned per cow

____3. Average weaning weight

____4. Average days in holding pens

____5. Pigs farrowed or weaned per litter

____6. Pounds of concentrates, grains, and roughage per pound of gain

____7. Feed costs per 100 pounds produced

____8. Percent calf crop

____9. Average days in feedlot

____10. Eggs per hen

____11. Feed per dozen eggs

____12. Average daily gain

NOTICE

The following assignment sheet is not part of the written test. If this activity has not been completed, check with your instructor.

OBJECTIVE 10

Compute a livestock and crop enterprise analysis.

SCORE ________

OBJECTIVE 1

1. a
2. e
3. c
4. f
5. g
6. i
7. h
8. d
9. b

OBJECTIVE 2

- To pinpoint level of profitability of enterprise
- To identify factors affecting profitability of enterprises
- To determine relative efficiency of enterprises
- To indicate enterprise which could be increased or decreased to increase profits
- To aid class member in decision making by using historical records to reveal levels of performance from year to year

OBJECTIVE 3

1, 2, 3

OBJECTIVE 4

- Increase size of enterprise
- Increase output
- Decrease fixed and variable costs associated with enterprises
- Increase selling price by utilizing better marketing methods

OBJECTIVE 5

- Return above variable expenditures – amount of receipts exceeding variable expenditures
- Net return above variable and fixed expenditures – measures total profitability of the enterprise

OBJECTIVE 6	1. c 2. a 3. b
OBJECTIVE 7	3, 4, 6, 7, 8
OBJECTIVE 8	3, 4, 5
OBJECTIVE 9	2, 3, 5, 6, 8, 9, 10, 11, 12
OBJECTIVE 10	Refer to answers to Assignment Sheet 1.